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[1] *J. Biol. Chem., 76:2.* [2] *Ibid., 66:451.*
[3] *Ibid., 80:15.* [4] *Ibid., 76:251.*

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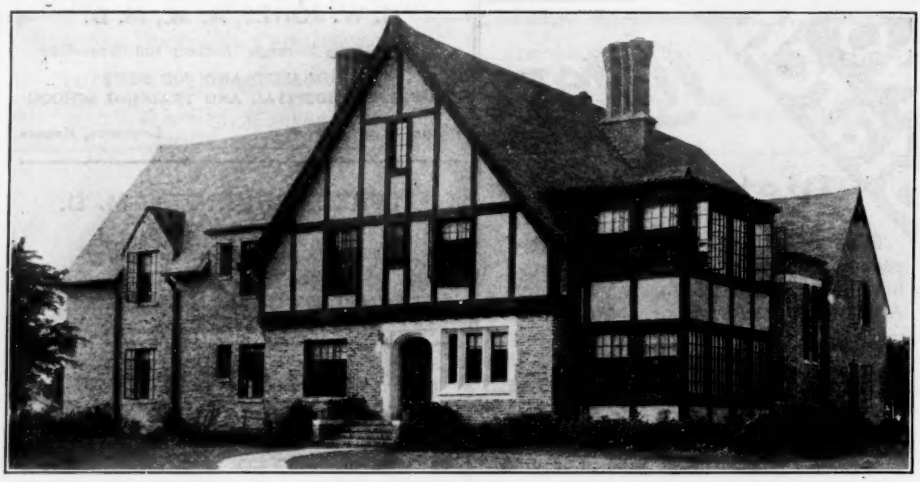

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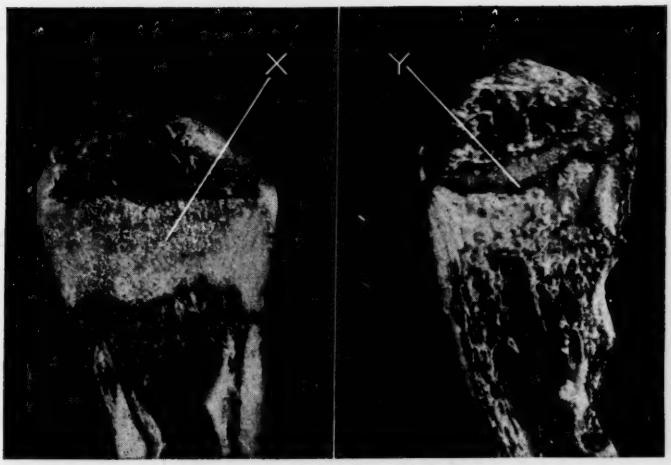

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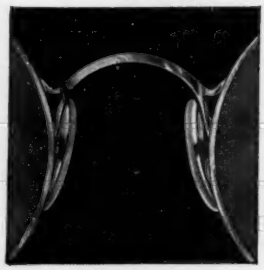

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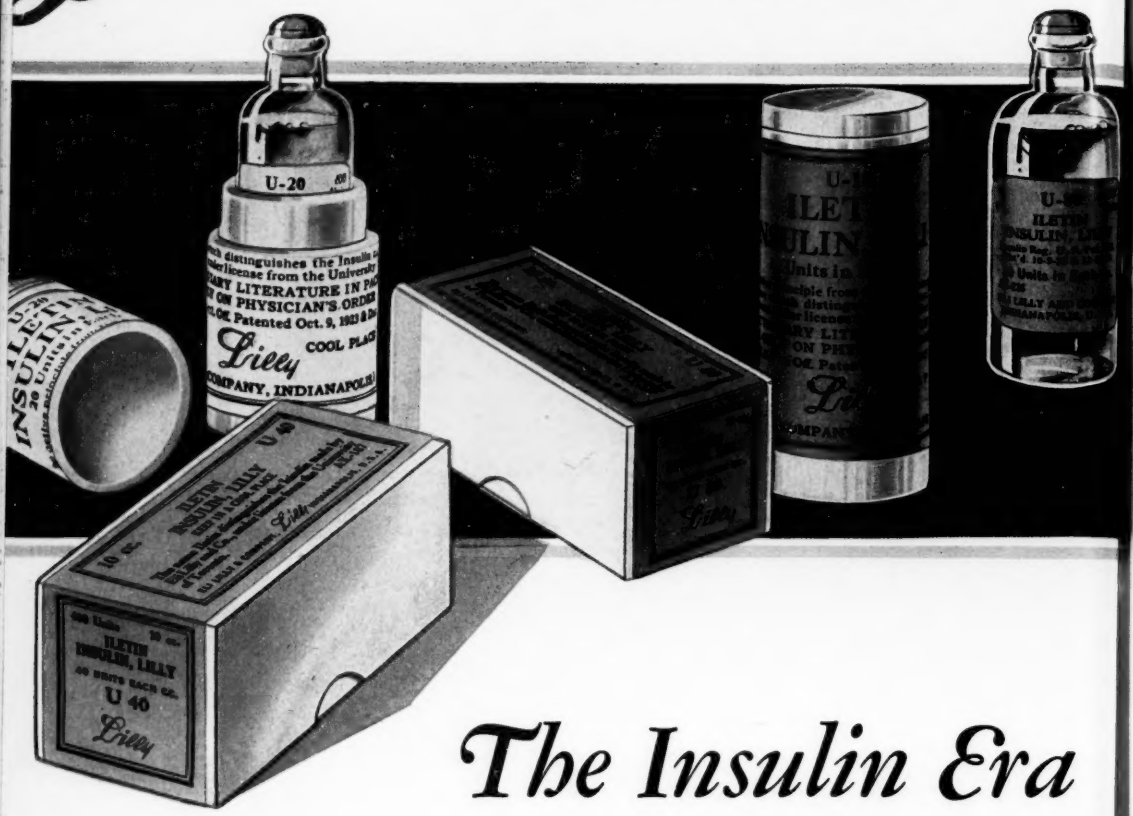

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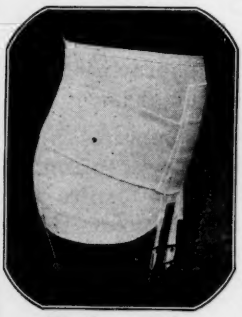

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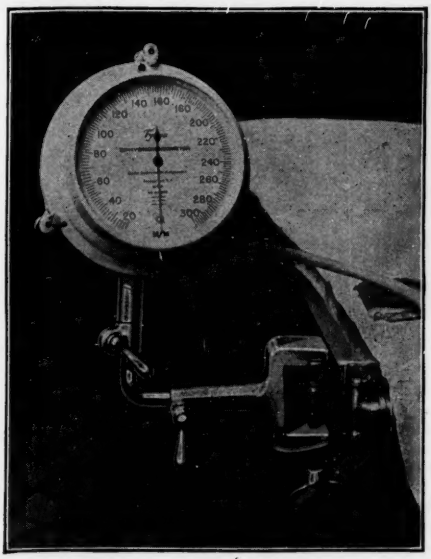

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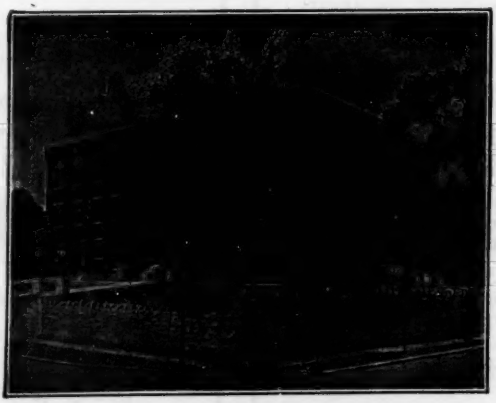

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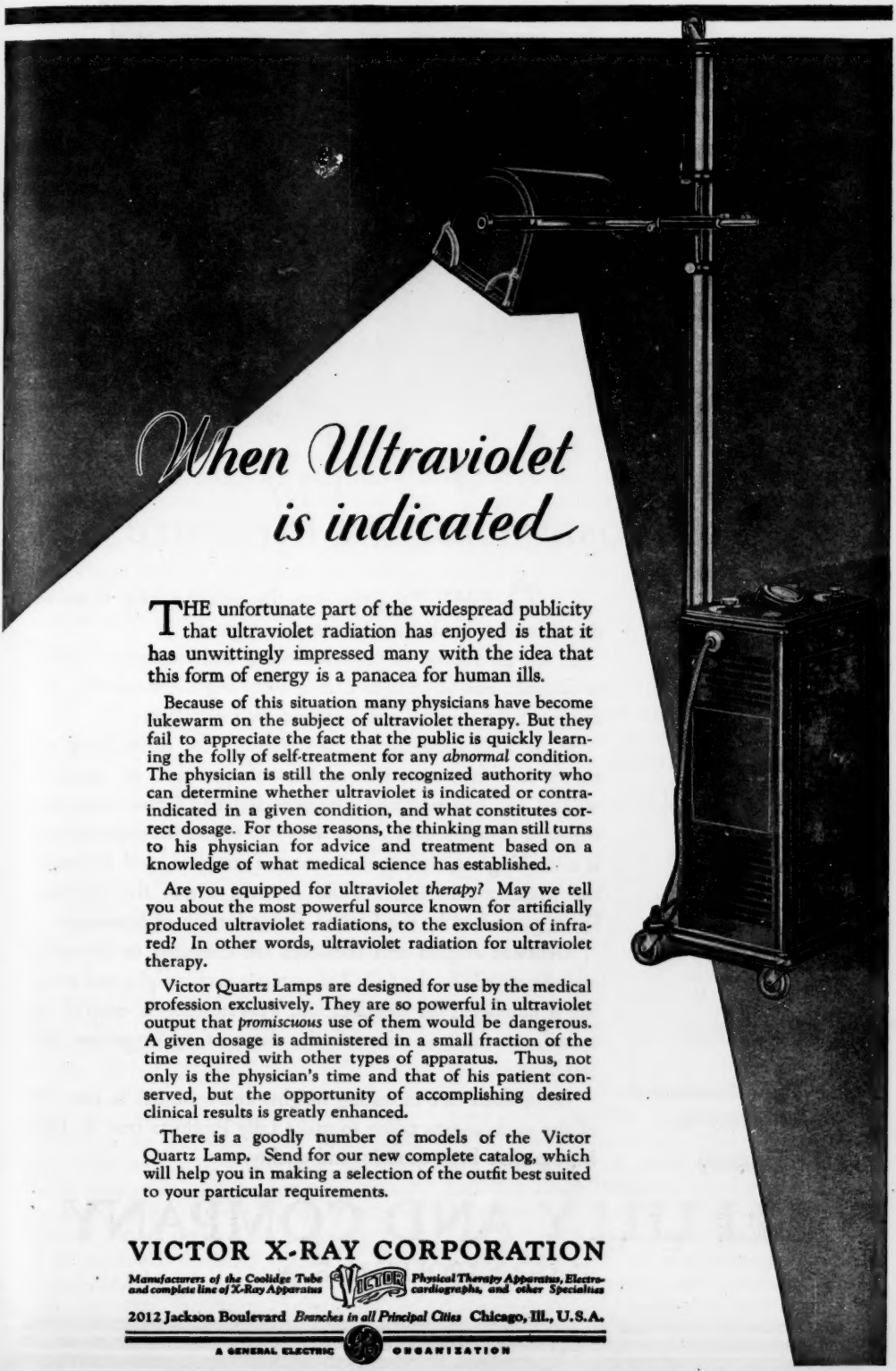

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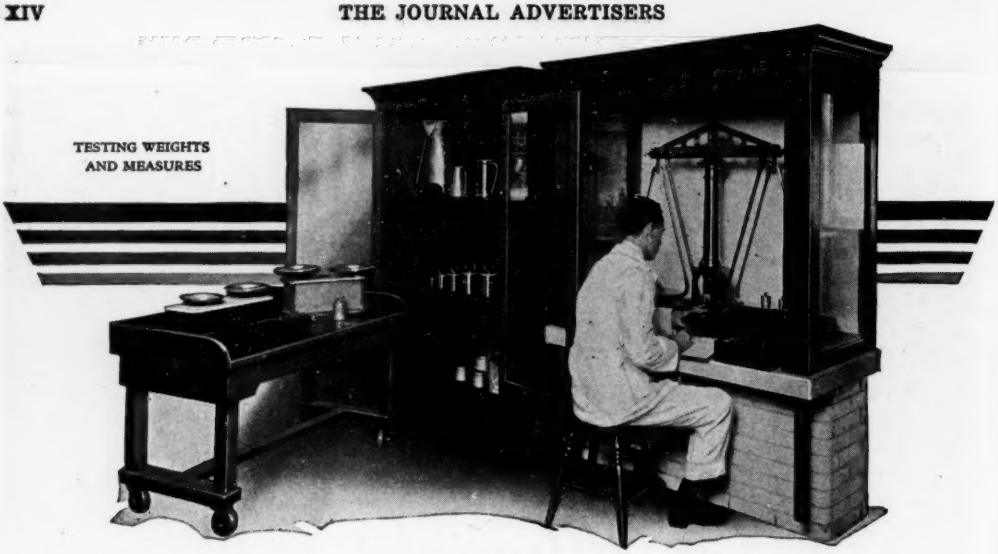

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The Early Diagnosis and Treatment of Infantile Paralysis

C. B. Francisco, M.D., Kansas City

Read before the annual meeting of the Kansas Medical Society, at Salina, Kan., May 7, 8 and 9, 1929.

Infantile paralysis is probably becoming more prevalent. Epidemics are certainly appearing more regularly and between these regular outbreaks cases are occurring more often. There are few communities that do not have a case or two each year. The disease is being feared more and more by parents who have children and as a result the lay public is becoming informed as to the necessity of early diagnosis and treatment. Therefore, the medical profession is going to be expected to keep abreast of the advancements made from time to time in the management of the disease.

In the severe case, if the child does not die from the disease, it is crippled for life. There is nothing that can be done to restore the destroyed motor nerve cells in the spinal cord and only very little can be done to compensate for the effect of this destruction. These facts should be brought home to the profession and the full realization faced that the only way to possibly prevent death and minimize permanent crippling is by early recognition of the disease and prompt action before the paralysis appears.

It is not likely that we will ever be able to prevent infantile paralysis outbreaks. Quarantine methods have failed just as they have failed in preventing outbreaks of other infectious diseases, such as measles, scarlet fever and the other common contagious affections of childhood. Every child seems to have the potential of these diseases, and under proper environments, which we do not understand, are able to develop the disease and transmit it to perfectly healthy contacts. Fortunately infantile paralysis is not as contagious as the common infections of childhood. The inherent potential and environment determines whether or not the child or individual is to be attacked.

There has been sufficient experimental and practical work done to establish positively that convalescent serum and Rosenow's serum are of great value in infantile paralysis. It has also been as definitely established that to be of benefit in these cases they must be given before the paralysis has occurred. After the toxin has become sufficiently matured in the body to produce destruction of nerve cells it is not reasonable to assume that a small amount of immune antibodies could possibly neutralize it quickly enough to prevent this destruction. The problem, therefore, is to recognize the disease in the pre-paralytic state, and the responsibility is squarely up to the doctor. The most of us have been taught that this was not possible in any case before the onset of the paralysis, and we have been content to let it go at that. However, the truth of the matter is, that in most cases it is possible to recognize the disease in its pre-paralytic state. On account of this fact I desire to outline in a simple manner the early symptoms of this disease.

Infantile paralysis occurs in the Summer and Fall. It is characterized by sudden onset with a relatively high fever, nausea or vomiting, constipation, prostration, exaggerated reflexes, which are later absent, and it attacks perfectly well healthy normal children, usually under the age of five, and is individualized by the ever constant physical sign of stiff neck and slightly rigid spine. Such a child cannot place his chin on his chest nor can he sit up comfortably in bed and put his head between his knees. Therefore, given a case with the above history and the stiff neck and back, one is perfectly justified in diagnosing infantile paralysis. In such a case a lumbar puncture is definitely indicated and should be

done to confirm the diagnosis and in addition it is of definite therapeutic value to relieve the tension of the spinal fluid.

If the spring fluid shows an increased number of cells varying in number from twenty to two hundred, this practically proves the diagnosis. It should be remembered that the cell count of the spinal fluid should be made immediately after it is withdrawn and, if it is not possible to take the child to the microscope then the microscope should be taken to the child. However, finding the spinal fluid under slightly increased pressure is really sufficient, if it is not possible to do an immediate cell count, and it is not really necessary to do the lumbar puncture for diagnosis at all. This is the time to begin arrangements for the giving of serum and one should not wait for the onset of the paralysis to prove the diagnosis, for it is then too late to hope for benefit from the serum. The early symptoms and physical findings are no indication as to what the ultimate severity of the attack may be. There is no way to determine whether the case is going to be of the abortive, mild or severe type.

Unfortunately we have not had sufficient experience to know how much of the serum is necessary and how best to give it. Aycock and Luther, of Boston, in their report of the results of 106 cases, reported in the J.A.M.A., page 387, Aug. 11, 1928, give two intraspinal injections of 15 or 20 cc. each of convalescent serum on successive days, but state that they do not know whether this is adequate or not, but their results were very favorable as compared with cases that were not given the serum. Shaw and Thelander of San Francisco, report on the intramuscular use of convalescent serum in the J.A.M.A. June 16, 1928, page 1923. The advantage outlined by them is that when the diagnosis is in doubt the patient can safely receive whole citrated blood, intramuscularly, if a convalescent donor is at hand and be protected at the most opportune time without being jeopardized in the least. Where they gave the convalescent serum the doses were usually about 30 cc. repeated every few hours if symptoms warranted it. It has not been proven that the serum from recent cases is of any greater value than serum from old cases but theoretically the serum from recent cases should be of greater value. It has been definitely shown by Flexner that normal serum has no protective value.

Anticipating that the diagnosis of infantile paralysis will be made in the pre-paralytic stage the Experimental Laboratories at the University of Kansas School of Medicine, has collected a limited quantity of convalescent serum from cases that had the disease last year. It is put up in 10 cc. ampules and is available day or night at Bell Hospital. It is suggested that 10 cc. of the serum be given intravenously, followed by immediate lumbar puncture and twelve hours later another 10 cc. be given intramuscularly followed by lumbar puncture. It is suggested that this serum be requested and given only in the cases where the diagnosis is reasonably certain as the supply is limited. However, it should be remembered that the giving of the serum will do no harm and errors of diagnosis should be made on the conservative side.

Communities should, in my opinion, especially where there are laboratories, make a supply of serum and have it available during the summer and fall. Where there are no laboratories cases that have had infantile paralysis should have Wassermann tests and their consent secured to furnish either whole blood or serum in the event that a case develops in the community and the diagnosis is made in the pre-paralytic stage. Would also like to state that the Research Laboratory in charge of Dr. R. G. Haden at Bell Hospital in Kansas City, Kansas, will be glad to collect the serum from donors who have had this disease and keep it available at all times. The serum can be kept only from six to ten months, so that it will be necessary to renew the supply every year.

While I have spoken particularly of convalescent serum it should be remembered that Rosenow's serum, which is prepared from the immunized horse is of value when used before paralysis begins. It seems to be, however, the con-

sensus of opinion among the workers in this line that convalescent serum is superior to Rosenow's serum. It has the disadvantage of always producing a troublesome serum rash one week after it is given while there is practically no reaction from the convalescent serum.

Mercy Hospital, Kansas City, Missouri, has set aside one of the contagious departments for use in the treatment of early or suspected cases and also has a limited supply of convalescent serum. This should be appreciated as no general hospital is willing to accept these cases and they are not equipped to properly care for them. Any suspected or early case would be received by Mercy Hospital at any time without notice or without formality.

In conclusion I wish to emphasize the importance of keeping in mind the early symptoms of infantile paralysis and of the definite benefit that can be secured by the use of convalescent serum in the pre-paralytic state.

Some Suggestions Concerning the Successful Management of Appendicitis

J. N. Dieter, M.D., Abilene

Read before the annual meeting of the Kansas Medical Society, at Salina, Kan., May 7, 8 and 9, 1929.

The successful management of appendicitis demands thorough appreciation of both medical and surgical possibilities, since each case must be judged individually and treated according to the art and not by rule.

All agree it is usually a surgical disease, the question being the opportune time for operation. No greater mistake can be made in medicine than to allow the statistics of great surgical clinics to settle this problem for all men who operate.

A disease so protean in nature and sensitive to insult, permits only a very narrow deviation from set standards to duplicate results, and sinec undoubtedly a majority of the cases are handled under less favorable conditions, we should anticipate a marked difference in the death rate and plan our treatment accordingly.

Does the report of the Government Bureau United States Vital Statistics, which indicates the death rate from appendicitis increased 30.9 per cent from 1900 to 1922, suggest a mode of living which makes this disease more frequent or more fatal, does it imply a deterioration in surgical technique or prove poor judgment in selecting a successful plan of treatment?

No one will deny that both diagnosis and surgery reached a plane of development in 1922 much higher than that of 1900, nor will they question that surgery was more frequently employed during the latter years. If that be true, what is the answer? More than likely a step in the wrong direction.

From 1900 to 1922 the trend of treatment was undoubtedly from conservative to radical measures. Is that the explanation? It might be well to consider that possibility, so we will refer to statistics which are always interesting, some times illuminating.

Let us consider some from the medical as well as the surgical viewpoints and attempt comparison.

Beginning with those recently given, showing the outcome of 11,000 cases treated only surgically in thirty-five representative large hospitals in America, the reported death rates varied from 6 to 16 per cent.

Reliable medical statistics seem especially difficult to obtain. I offer a series reported from St. Thomas Hospital, London, in 1895.

Two hundred sixty-four cases treated medically were studied and classified as follows:

(a) Those with peritonitis limited to right iliac fossae. 190 cases. No deaths.

(b) Peritonitis similarly located but terminating in perityphlic abscess. 38 cases. 10 deaths.

(c) Those with general peritonitis. 36 cases. 27 deaths.

Total mortality for series—14 per cent.

So much for cases treated exclusively by either method.

The following tables reflect beautifully the benefits obtained by a sensible combination of both methods.

One thousand cases so treated in the London Hospital were reported in 1913.

Of these 698 were operated during the acute attack while 302 received medical treatment and were operated during the quiescent stage.

1st. General peritonitis group. 80 cases. 16 died. Mortality—20 per cent.

2nd. Localized peritonitis with abscess. 211 cases. 7 died. Mortality—3.3 per cent.

3rd. Localized peritonitis only 123 cases. 6 died. Mortality—4.8 per cent.

4th. Inflammation limited to appendix. 284 cases. 1 died. Mortality—.3 per cent.

Total death rate for 698 treated as above, 4.3 per cent.

Completing the 1,000 case series by adding to it the 302 they elected to operate in the interval, the death rate is reduced to 3.2 per cent for the series. This reduction is attributable to careful selection of treatment and indicates more than ordinary well placed confidence in expectant measures.

The unusual thing in this series is that nearly one-third of those cases escaped operation until the interval stage.

Think of the enormous chances they took, but did they actually risk so much?

Let us commit the unpardonable sin of juggling statistics, being fair minded enough to be reasonable and see what they probably risked.

We will give Hawkins' series of 264 medical cases only the benefit of very late surgery, viz., that indicated because of abscess formation or generalized peritonitis, applying to them the same death rate as shown in similar types in the London surgical series.

The substitution in figures will be as follows: 20 per cent surgical mortality for the 36 general peritonitis cases reported medically at 75 per cent and a 33 per cent surgical mortality for 38 abscess cases reported medically at about 26 per cent. Tabulated from that standpoint, the results show as follows:

(a) Peritonitis limited to right iliac fossae. 190 cases. No deaths.

(b) Peritonitis similarly located but terminating in perithyphlic abscess. 38 cases and 3.3 per cent mortality. 7.25 deaths.

(c) General peritonitis. 36 cases and 20 per cent mortality. 7.20 deaths.

Average death rate in this hypothetical series treated by what today we would term neglected treatment 3.2 per cent.

Thus we have changed a 14 per cent medical mortality to a 3.2 per cent with only the aid of very late surgery. A 3.2 per cent mortality is not bad and has been attained by widely differing methods of treatment. It should convince one of the futility of the 48 hour operation as protection against a terrible death rate if treated otherwise.

The London series 698 cases as shown below confirms this statement. We find reported by hours:

Those operated first 24 hours, 1.2 per cent died.

Those operated second 24 hours, 3.9 per cent died.

Those operated third 24 hours, 8.7 per cent died.

The inference to be drawn from these comparisons is, that there is a time, usually about 30 hours following the initial symptoms when the average good operator will do well to think twice before operating, because of the great likelihood of converting a localized infection into a generalized one solely by his interference. Only a few hours later the master surgeon is likely to do the same thing, thereby increasing rather than decreasing the death rate. Before deciding our plan of treatment, let us refresh our minds concerning all factors which have any bearing on it.

We will discuss first its physiology and histology. If we could erase from memory that old fashioned joke of the appendix being a functionless relic of an ancestral cecum, it might cause us to study it with a bit more interest and profit. To me it seems more reasonable to accept Waller and Coles' idea that it is a specialized part of the cecum with a definite persistaltic and sphincteric action, and they add, it serves as a physiologic culture tube to furnish bacteria for colonic digestion.

Heile subscribes to this physiology in the main, except he claims the walls secrete tryptic and amyolytic ferments, also an hormone which stimulates peristalsis. In my opinion its wealth of lym-

phoid tissue rather brands it a brother to the pharyngeal tonsils and in common with all tonsils plays an important part in the early immunizing functions of the body. The pharyngeal tonsils against the bacterium common to the respiratory tract, the appendix those that naturally inhabit the bowel. Structurally these organs are ideal for the formation of bacteriophages or of activating substances. Be that as it may, we will agree it is a tube closed at one end and lined with mucous membrane. This in turn is surrounded by the submucosa and between these layers a thin band is composed of circular muscular fibers, blood vessels, glandular and lymphoid structures. Surrounding these are muscular layers. The inner one comprising one-third the thickness of the organ, is made up of circular fibers, the outer layer longitudinal fibers, all this being covered by peritoneum and surrounded by mesenteric, or other peritoneal surfaces.

This tubular organ communicates with the cecum where it discharges its contents. It is most active during early life. When infected and inflamed, it is at once beset with many problems. In the first place, the mucous membrane and glandular elements swell, their secretions are increased both tending to block a free drainage into the bowel. Inflammatory irritation produces a hypertonic vagus and a spasm and contraction of all muscle fibers which further embarrasses its lumen and subjects its blood supply and lymphatics to a pressure that predisposes to infection, gangrene and perforation. Add to this the danger of a blowout in its ulcerated and weakened wall on account of an enormous back pressure of gas in the cecum due to improperly coordinated peristalsis and contraction of abdominal muscles. This just about covers most of the influences which gives it its bad reputation.

These factors dominate the situation and are most amenable to treatment in the early days of the attack and it is during this time our mortality will be determined according to our ability to influence the varying factors.

If you are fortunate enough to be in position to operate in the thirty-hour period, remove the appendix by all means, after this time, remember the golden opportunity for medicine looms not far off. Operate only on very special clinical indications and then operate gently, rapidly and conservatively.

As you approach the 48-hour period surgery assumes responsibility for two risks—both serious. The first the likelihood of converting a localized peritonitis into a generalized one, and second, during the intermediate stage of acute septic spreading peritonitis, you may embarrass reparative processes and lead to fatal issue.

W. J. Mayo, in 1922, says statistics show if the cause of acute peritonitis is removed within six or eight hours, and peritoneal toilet is proper, the resulting peritonitis will be slight and localized.

After twelve hours the prospects of favorable termination following removal of primary cause is greatly reduced. After 24 to 36 hours, such removal may do little to check the spread of peritonitis, and more likely lead to fatal issue. He warns against failure to recognize the difference between the stage of contamination which is an immediate result of perforation, and spreading peritonitis caused by the infection.

Deaver states, if the appendix is buried in a mass of omentum and coils of intestines, it is incapable of adding to infection.

In the event one has been fooled into opening the belly at this stage, he should content himself by carefully placing a cigarette drain to the site of the appendix and close around it, being content to remove during the interval. This necessitates two operations, an excellent life saving measure, but one not popular with the patient. I believe the appendix can be removed at the first operation with no greater death rate than in the other method, by adopting the following plan, which I have used for several years. I carefully encircle the base of the appendix with a suture of silkworm gut which is then tied tightly, another one treats the mesoappendix in the same fashion. The ends of these sutures are left long enough to allow them to lie on the surface of the belly. They are en-

cased in rubber tissue from appendix out. This serves as a drain. In about a week the appendix will slough off and come out.

It has been very gratifying to me to see how well the patient responds to this treatment. Their convalescence has been as uneventful as those operated in the first twenty-four-hour period.

I wish to warn against using either plain or chronic catgut in this ligation since they are either digested or absorbed too early and the appendix may remain viable. Only silk or silk worm gut should be used. On two or three occasions when technical difficulties forbade the ligature, I employed artery forceps for the same purpose. These were left in situ for four days, then removed. I realize the possibility of weight necrosis and intestinal fistula due to the pressure of the forceps which protrude from the belly. However, it has not occured in my cases. Hospitalization has been lengthened only two or three days over those in which the appendix was removed and the belly was entirely closed.

It is the simplest one stage method possible and I believe is the safest one to employ in severe localized peritonitis or the frank intermediate period of septic peritonitis. A minimum of tissue handling is required, thus less danger of spreading infection. No apparent risk is assumed by leaving this tied-off, infected appendix in situ if I may judge by my own experience. This observation adds weight to the contention there is more chance of spreading infection by manipulations for removal than from extension by leaving an infected appendix complicated by localized peritonitis in the abdomen.

In severe cases one need do no more than ligate the base of the appendix, sincee the extensively thrombosed vessels of the mesoappendix would usually insure complete destruction of the organ.

Immediately following ligation, Ochsner's conservative treatment is employed the same as in all cases elected to be treated medically, not failing to use plenty of atropine and sufficient morphine or magnesium sulphate to render patient comfortable until convalescence is well established.

After the first few hours in any patient when surgery is no longer indicated, Ochsner's treatment in a modified form is employed. Furnishing fluids, nourishment by rectum, relief of pain and arresting peristalsis does not meet all indications as Ochsner decided.

Any measure which will aid drainage, reduce secretion, assist the blood supply and diminish the tremendous muscular and gas tension in the appendix and large bowel, must tend to mitigate the severity of the attack and render less likely dangerous complications.

Atropine is the remedy of choice, supplemented if need be, by morphine.

You can cut off the blood supply in a finger by a tight rubber band and cause necrosis from interference with proper circulation. It is cut off in much the same manner in the appendix by intensely contracted circular muscular fibres. It is seldom that an appendix causes serious trouble if it has adequate drainage into the cecum.

Any ulcerated or gangrenous appendix is liable to burst if subjected to tremendous gas pressure or contraction on retained contents.

Any patient is liable to die in whom the contents of the small bowel are absorbed from the duodenum and stomach instead of emptying into the cecum and being carried on to the rectum.

Atropine, because of its ability to relax over contracted smooth muscle fiber, relieves the spastic pylorus, ileocecal valve and internal sphincter of the anus.

The reflex spasm initiated by peritoneal irritation which disturbs the autonomic motor ganglia of Auerbach is relieved by it and thus the normal coordinated purposeful peristaltic wave is encouraged thereby, facilitating the passage of gas and feces and reducing the tendency to meteorism, regurgitant vomiting and toxemia from disturbed intestinal function.

By the use of the remedies mentioned in connection with Ochsner's classical treatment, occasionally adding 8 m doses of 25 per cent magnesium sulphate so-

lution hypodermically t.i.d. to intensify relaxation, the results have been so uniformly successful that I have little fear cr compunction about treating the disease expectantly.

Guided by this experience, I have for several years adopted this plan, usually insisting on surgery during the first 30-hour period and then only on extreme indications until after the eighth day (children excepted) or at the time of distinct localized abscess formation.

I seldom feel competent or forced to operate between these times, choosing to rely on the expectant measures outlined above—pushing all drugs to full physiological effects and continuing as indicated by symptoms to stage of recovery or elective time for surgery. Atropine is given at once, 1/75th to 1/50th gr. during the first 2 hours followed by 1/200th every 4 to 6 hours to continue effect. Never employ morphine unless forced to by pain, in that case giving to complete rest, if relaxation is not then marked magnesium sulphate is indicated.

A personal experience comprising about 30 very severe acute exacerbations of appendicitis, about one-half of which were treated by the method outlined above and in which, much to my surprise, the period of marked disability was often reduced from 7 days to 3 days, convinced me of its unusual value. There being no reliable blood or other test to accurately guide us in treatment, it is probably safer to judge solely by the clinical character which can be seen rather than according to anatomic conditions which can only be surmised.

Regardless of what treatment you adopt, remember it requires confidence and courage to carry it out, vacillation courts disaster.

Appendicitis in the young is commonly so atypical, the symptoms of any acute belly is probably appendicitis. First ruling out pneumonia, they are usually such rapid affairs, it is wise to operate on fewer indications. An abscess is liable to be well formed in 4 or 5 days. You may expect about double the death rate if patient is under 10 or over 50 years of age.

A gangrenous appendix usually produces neither pain or leucocytosis. Its next symptoms are a generalized peritonitis, especially in childhood when it is 3 or 4 times as common as in adults. The acute perforative type tends to be localized or generalized from the very start depending on the kind of bacteria and the patient's resistance.

Tumefaction tends to show quiet localization and had best be undisturbed. Let the patient either get well or form a localized abscess which can be safely drained.

If you must employ the blood count, do not take simple leucocytosis too seriously, too many things can influence it. Taken in connection with the differential count, more information is obtained. According to Sondern's hypothesis the polynuclear percentage is an index of infection, the total leucocytosis an index of body reaction and the proportional relationship an index of resistance. A rising polynuclear count being of most surgical value.

Most clinicians can interpret their clinical findings with more reliability.

Castor oil or other physic has no place in the first few days of an attack since they incite reverse peristalsis rather than assist in restoring the co-ordinated purposeful type.

A reasonable amount of soda bicarb in the fluids by rectum assists markedly in controlling acidosis and adds to the patient's resistance. I seldom find it necessary to use glucose solution except in those improperly treated in the beginning of an attack. Local anesthesia should be used far oftener than it is. In conclusion let me add, if your surgical mortality is not extremely small, around 2 per cent, it is probably because you have not taken advantage of the assistance of proper conservative measures.

———B———

It is stated by Baar, Vienna, that in cases of general dropsy, when in doubt as to whether it is primarily cardiac or renal, a positive blood indican test always points to the kidney as the primary factor.

Is a Physician Ever Justified in Recommending Raw Cow's Milk?

L. B. Gloyne, B.S., M.D.

Department Preventive Medicine, School of Medicine, University of Kansas

Read before the Wyandotte County Medical Society.

Before attempting to answer the question, "Is a physician ever justified in recommending raw cow's milk?" it might be well to review, briefly, some of the factors, that will have a bearing on the answer.

No definite knowledge of the relationship of milk to public health was possible until evidence could be obtained of the causes of human diseases, and the source from which they came.

In the year 1857, Dr. M. W. Taylor reported the first milk-borne epidemic. It was a typhoid epidemic in the city of Penrith, England. Ten years later he reported a scarlet fever epidemic traced to milk. A few more epidemics were reported from time to time up to 1881, mostly by English observers, but these were not sufficient to attract any marked attention by the medical profession or public health authorities.

The year 1881, as suggested by Sedgwick, must be recognized a most important year in the history of milk in its relation to public health, because it was in that year that two striking events occurred. The first was a collection by Dr. E. Hart of England, of a list of milk epidemics. This list included fifty epidemics of typhoid fever, fifteen of scarlet fever, and four of diphtheria. The second was the invention by Koch of Germany of solid culture media, whereby it was easily possible to isolate pure cultures of different species.

According to Armstrong and Parren, from 1881 to 1927, 791 milk-borne epidemics have been reported. They were distributed as shown by Table 1.

In 1927, 29 epidemics were reported in the United States and Canada, as shown in Table 2.

MILK A DISEASE PRODUCER

All authorities are agreed, that the principal cause of infant deaths has been diseases of the intestinal tract. Infant diarrhea is most prevalent among those who are artificially fed. Bovine tuberculosis is quite common among dairy cows, and we know that it is transmissible to human beings. The incubation period of tuberculosis is long, thus many may get their infection in the milk-drinking period of life, and then not develop the symptoms until much later.

We have had at least 42 reported epidemics of milk-borne septic sore throat, and now milk-borne undulant fever is being reported.

When we consider all the diseases for which no definite data are available, in addition to the known cases, then one must feel that milk may be a very dangerous as well as a very beneficial food.

A most recent epidemic which occurred at Lee, Massachusetts, in July of last year (1928) gives us some valuable information Within two weeks there occurred approximately 600 cases of septic sore throat, with 36 deaths, in a population of about 4,000. Dr. Geo. H. Bigelow, State Commissioner of Public Health of Massachusetts, reports that the epidemic terminated abruptly following the enforcement of a local ordinance requiring the pasteurization of all milk. The moral, he says, is that raw milk is a very potent vehicle for the transmission of disease.

Rosenau states, "Milk-borne outbreaks of disease are always due to raw milk; often milk of good quality, even certified milk. There is no record of a milk-borne outbreak attributable to properly pasteurized milk."

The American Public Health Association has recommended, by a unanimous

TABLE 1—Recorded milk-borne outbreaks (all types) in the United States by five-year periods, Jan. 1, 1881, to Jan. 1, 1927.

Years	Outbreaks	Years	Outbreaks
1881-85	3	1911-15	238
1886-90	14	1916-20	130
1891-95	26	1921-25	130
1896-00	33	1926	12*
1901-05	60		
1906-10	145		
		Total	791

*Evidently at the time this report was made, all the reports for 1926 had not come in, as reports from the American Child Association shows 69 milk-borne epidemics in the United States and Canada in 1926.

TABLE 2—Recorded milk-borne outbreaks in the United States and Canada, 1927.

Date	Disease	Place	No. Cases	No. Deaths
Nov.	Diphtheria	Pella, Iowa	9	0
Aug.	Scarlet Fever	Kalispell, Mont.	139	3
Nov.-Feb.	" "	Schuylerville, N. Y.	5	0
Jan.	" "	Janesville, Wisc.	22	0
May-June	" "	Washington Boro, N. J.	199	0
Oct.	Typhoid Fever	Medford, Ore.	45	4
July-Oct.	" "	Moriah, N. Y.	25	4
Feb.-Aug.	" "	Montreal, P. Q.	5002	533
Aug. 9-30	" "	Chatham, Ont.	108	4
May-June	" "	Lancaster Co., Pa.	10	0
Dec. 21	" "	Yellow Springs, Ohio	7	2
Sept.	" "	Riverside Boro., N. J.	9	1
Oct.-Nov.	" "	International Falls, Minn.	6	0
Aug.-Sept.	" "	Rumford, Maine	20	0
Oct.	" "	Owl's Head, Maine	6	1
Dec.	" "	Van Buren, Maine	7	1
Sept.-Oct.	" "	Hoisington, Kansas	46	1
April	" "	Hawardson, Iowa	43	3
Sept.*	" "	Fairfield, Iowa	10	1
June	" "	Cairo & Mounds, Ill.	15	1
Sept.	" "	Negeler, Ill.	14	2
Feb.-May	" "	Tempe-Mesa, Ariz.	15	4
March	" "	Napa State Hospital ,Calif.	29	5
March-April	" "	Rutland, Vermont	16	3
July	Paratyphoid B	Saddle River & Hohokus Boros., N. J.	43	0
March	"	Bridgewater, Va., Boarding School	10	0
Sept.-Oct.	Undulant Fever	Newark, New York	3†	0
March-Dec.	" "	Thruout Michigan	25	0

*Suspected milk-borne.
†Possibly 4.

vote, that all milk, including certified milk, be pasteurized.

WHY RAW MILK HAS BEEN RECOMMENDED

With such evidence before us, the question is immediately raised: "Why do so many physicians recommend raw milk?"

Personally, I believe that there are three main reasons for this. First, lack of consideration of the dangers of raw milk, or the belief that proper sanitary regulations will overcome these dangers. Second, the character of some pasteurized milk with which we have had experience. Third, the fear that pasteurization does not do all that is claimed for it, and that the food value of the milk, especially in vitamines, is greatly reduced by pasteurization.

Concerning the dangers of raw milk, I believe that sufficient data have been given to make everyone feel that there are some real dangers in it. It has been proven conclusively that proper regulations and sanitation will not overcome all these dangers.

Milk produced from clean, healthy cows, by an intelligent dairyman, with plenty of first class equipment, is much less apt to be the cause of disease than is milk which is produced otherwise. But who can tell, when a dairyman will become a typhoid carrier; or when the hemolytic streptococci will get into the milk from the cow, or the milk handler. In the before mentioned epidemic in Lee, Massachusetts, cultures of hemolytic streptococci were obtained from one of the cows, and from a number of the milk handlers; and it was impossible to determine whether the cow infected the individuals, or the individuals infected the cow.

One likes to think that raw milk is free from tuberculosis, and that the requirement, that all cows be tubercular tested, makes the milk safe. But if one will study the test charts, that come in every six months (when the dairy inspector has carefully carried out his work and required it), then one will find that a number of cows develop tuberculosis between tests. I know of one herd from which certified milk was supplied, that

developed six tubercular cows between tests.

EFFECT OF PASTEURIZATION ON THE BACTERIA IN MILK

Undoubtedly the second reason, namely, the character of the pasteurized milk with which some of us have had experience, has been quite a factor in recommending raw milk. There is good pasteurized milk, and there is poor pasteurized milk. One must keep in mind that pasteurization is not a substitute for sanitation. Good pasteurized milk must be handled just as carefully as good raw milk. There was a time in this community, when grade B raw milk was pasteurized and then called grade A pasteurized milk, because the product after pasteurization had as low or a lower bacterial count than grade A raw milk. This is entirely wrong. The process of pasteurization does not raise the grade of milk. It can, however, make a grade B milk safe for human consumption, in fact safer than grade A raw milk; but once milk becomes grade B, it is always grade B. Grade B pasteurized milk should be perfectly safe for all uses, even the feeding of infants.

Without doubt, the most desirable milk is the best grade of raw milk, or certified milk, properly pasteurized.

Some have said that it is impossible to get good pasteurized milk. I do not agree with that statement, but if I did, I would not agree to recommend raw milk in its stead. If such a condition did, or does exist, it is not the fault of the process of pasteurization; but it is the fault of our regulations, or the enforcement of these regulations; and as physicians interested in the health of the community, we should not sit supinely by and allow our clients to drink a potently dangerous raw milk.

I have stated that some of our milk has not been properly pasteurized. To properly pasteurize milk it must be pasteurized by the Holding method, which consists of rapidly heating the milk to 142 to 145 degrees Fahrenheit, and holding it there for 30 minutes, then promptly cooling it to at least 50 degrees Fahrenheit.

If the milk is not promptly cooled after pasteurization, it may have a bacterial count as high after pasteurization as it had before.

It has been conclusively demonstrated, that the tubercular bacilli, typhoid bacilli, diphtheria bacilli, the streptococci, and the abortus bacilli, are killed by heating milk to that temperature, and holding it there for 30 minutes. One may ask why a shorter length of time and a higher temperature is not recommended.

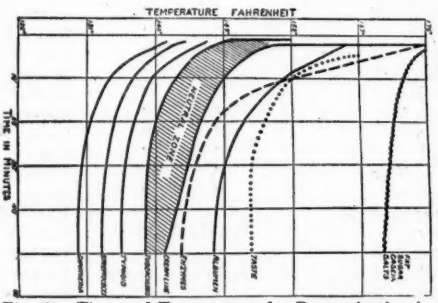

Fig. 58—Time and Temperature for Pasteurization in the neutral zone which is above the thermal death curves for the Pathogenic Microorganisms with minimum injury to the milk.—(U. S. Pub. Health Bull., 1925, No. 147.)

Chart 1 shows nicely the neutral zone in which no appreciable changes occur. As we raise the temperature, we note that first the enzymes, then the albumen, and then the taste is affected. It will be noted that the temperature at which the taste is affected is quite a bit above the pasturizing temperature. Some insist that they do not like the taste of pasteurized milk. My answer is that they cannot tell properly pasteurized milk from raw milk. To substantiate that opinion I once had 30 medical students served with two small bottles of unlabeled milk. One bottle contained good raw milk, the other the same grade of raw milk properly pasteurized. These 30 students were only 40 per cent correct in their guesses, a percentage that was not more accurate than if the character of the samples had been determined by the flip of the coin.

It is the custom of a great many to recommend that milk for infants and sometimes adults be boiled. Just what does boiling do to milk? It produces pronounced changes. In the main these consist of a partial decomposition of the

proteins and other complex nitrogenous derivatives; diminution of the organic phosphorus, and an increase of inorganic phosphorus; precipitation of the calcium and magnesium salts, and the greater part of the phosphates; expulsion of the greater part of the carbon dioxide; caramelization, or burning of a certain portion of the milk sugar, causing the brownish color; partial disarrangement of the normal emulsion; and coalescence of some of the fat globules; coagulation of the serum albumen, which begins at 75 degrees centigrade; the ferments are killed, some of the vitamins, notably C, are affected.

Because of all these changes, one can be certain that when they recommend boiled milk they are usually defeating the very goal at which they are aiming, namely, feeding "good fresh whole cow's milk." It would be better if the attending physician feels that he can not get good pasteurized milk, that he continue to recommend the purchase of raw milk, and then the pasteurization of the milk in the home rather than the boiling of that milk. He should further protect himself by telling the family that raw milk is potentially dangerous and that if it should be boiled, or pasteurized for the infants, it should be treated likewise for the older children and the adults.

EFFECT OF PASTEURIZATION ON THE FOOD VALUE OF MILK

The third reason which I gave for many doctors recommending raw milk, namely, that the food value is affected by pasteurization, has been partially answered already, when it was shown that the process of pasteurization did not affect the enzymes, albumen, taste, salts, casein, sugar and fats; but what about the vitamins?

Milk contains but a moderate and variable amount of antiscorbutic property, namely vitamin C. The amount of this dietary factor depends upon the quantity contained in the feed of the cow. Stall-fed cows in winter furnish a milk almost devoid of antiscorbutic property. This vitamin is influenced by age, oxidation and to a certain extent, by heat. Experiments have shown that the temperature of pasteurization recommended decreased this property in milk about one-half. In any case, cow's milk cannot be depended upon to protect children against scurvy, and they should therefore receive orange juice, or tomato juice, whether the milk is raw or pasteurized.

Milk at best has but a moderate antirachitic property, so-called vitamin D, which is not affected by heat. Rickets, therefore, cannot be laid at the door of pasteurization. It may readily be prevented by the use of cod-liver oil, and the benefits of sunshine.

CONTROL OF MILK-BORNE EPIDEMICS BY PASTEURIZATION

Recently Dr. William F. King, State Health Commissioner of Indiana, read a paper on the "Control of Public Milk Supplies" before the Section of Preventive and Industrial Medicine and Public Health of the American Medical Association. He states that at South Bend, Indiana, fourteen cases of undulant fever have been found. Among the dairy cattle furnishing milk to that city 40 per cent have been found infected with contagious abortion. Recently thirteen cases of undulant fever occurred among the students of Earlham College at Richmond, Indiana. As you are already aware, there have recently been some cases in Kansas City. A quotation from Dr. J. B. Berteling of South Bend, who was commenting on Doctor King's paper is worth repeating here.

"The author has the courage to plead for universal pasteurization, because of what seems to be a new disease, namely, undulant fever, perhaps wrongly called Malta fever. Why did we adopt an absolute pasteurization ordinance? Why does Doctor King plead for universal pasteurization? Primarily because in two opposite sections in Indiana, South Bend in the northwest, and Richmond in the southeast, thirty cases of so-called Malta fever occurred. Bacteriologists and clinicians have established the communicability of this disease from cattle to man through the medium of raw milk. Pasteurization destroys this organism; therefore, pasteurization should be enforced by law."

In order that I may not be misunderstood, and some draw the conclusion that

I think pasteurization is a panacea to cure all difficulties with a milk supply, let me quote from the summary by Armstrong and Parran of the United States Public Health Service.

"Ordinary raw milk, or its products, was incriminated in 179 outbreaks. 'Pasteurized' milk or its products was incriminated in 29 outbreaks, certified in 3, while in 356 the character of the incriminated supply was not stated."

If pasteurization does all that I have claimed for it, how do I account for those 29 outbreaks attributed to pasteurized milk. Let me again quote Armstrong and Parran.

"Among 29 outbreaks, which are reported to have followed the use of 'pasteurized' supplies (milk or ice cream), there were 12 outbreaks in which the evidence pointed to infection of the milk subsequent to pasteurization: in three outbreaks a possible substitution of raw milk could not be ruled out; and in three others, there was evidence that the heating was not to the specified degree. In two outbreaks the so-called pasteurization consisted in heating the milk in a starter can. In one outbreak the equipment was described as obviously faulty. Of the remaining eight outbreaks, one followed the flash method, while in seven either the method of pasteurization or the source of infection was not stated."

"That proper pasteurization of infected milk does prevent infection has been indicated in a number of instances in connection with the study of milk-borne outbreaks. A family in a northern county of Illinois with four cases of typhoid fever sold milk to three neighbors, all of whom developed the disease. The same milk was shipped to Chicago, where it was pasteurized, and no cases are known to have resulted (1921). In an outbreak at Richmond, Calif., in 1915, 12 cases occurred on a route selling 90 gallons of milk daily. During this same time this dairy shipped 600 gallons daily to Berkeley, where it was pasteurized, and no typhoid occurred."

"Similar examples of part of an infected supply being rendered harmless through pasteurization are noted in outbreaks at St. Charles Township, Kane County, Ill., 1921, in central New York state, 1922, and at Denver, Colo., 1926."

Neither Kansas City, Missouri, nor Kansas City, Kansas, has an infant mortality rate of which it can be proud. (See Table No. 3).

TABLE 3—Infant Mortality in 4 U. S. Cities
1915-1927

	Infant deaths per 1,000 live births												
City	'15	'16	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27
New York City..	99	93	89	92	81	85	72	75	67	68	65	68	56
Chicago.	**	**	**	**	**	**	89*	84	87	77	75	67	63
Kan. City, Kan..	**	**	112	136	108	108	71	90	97	94	88	84	75
Kan. City, Mo...	**	**	105*	113*	102*	117*	94*	100*	92*	88*	88*	65*	70

**Not in the Birth Reg. Area.
*Rates from State Authorities; not in Birth Reg. Area.
Data compiled by American Child Health Assn. Div. of Research.
From: Birth, Stillbirth and Infant Mortality Statistics 1920-1924. Department of Commerce, and Statistical Report of Infant Mortality, American Child Health Assn.

When we realize that New York City and Chicago with their crowded poorly lighted, and poorly ventilated tenement districts, and other unfavorable conditions for raising babies, can enjoy an infant mortality rate for the last 10 years, that has been much less than ours, then we must feel that something is wrong. And when we study New York's situation, and find that the infant mortality rate there before the advent of pasteurization was much higher than now, then we must accept pasteurization as an important factor in the reduction of that community's infant death rate. Certainly other factors have helped reduce New York's infant mortality rate, but those who have had intimate contact with the situation, feel that pasteurization has

been an imporant factor in that reduction.

In regard to Chicago, let me quote from Chicago's Health Preliminary Annual Report, Department of Health, 1927, Feb. 7, 1928.

"It is gratifying to note that no milk-borne outbreak of communicable disease has occurred in Chicago since 1916, when the ordinance was first strictly enforced requiring all milk, except certified, to be pasteurized."

PASTEURIZATION IN THE HOME

I have mentioned that if one feels that they can not purchase the proper kind of pasteurized milk they should purchase the best quality of raw milk, and then pasteurize it in the home. In order to show how simply that can be done, I want to show a drawing of a Strauss Home Pasteurizer. (See Chart No. 2). This pasteurizer was introduced by Nathan Strauss of New York City, and beyond doubt is of great value, when small quantities of milk are to be pasteurized. The technique to be followed is simple, and may be described as follows:

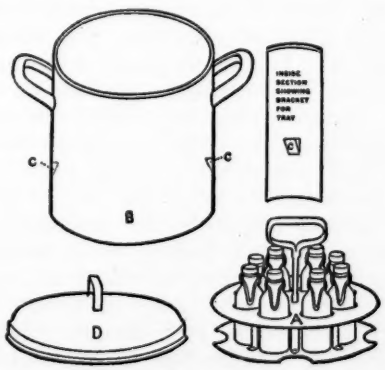

FIG. 59.—STRAUS HOME PASTEURIZER.

After the bottles have been thoroughly cleaned, they are placed in the tray (A) and filled with the milk or mixture used for one feeding. Then the corks or patented stoppers are put on without fastening them tightly.

The pot (B) is now placed on the wooden surface of the table or floor, and filled to the supports (C) with boiling water. Place the tray (A) with filled bottles into the pot (B) so that the bottom of the tray rests on the supports (C) and then put cover (D) on quickly.

After the bottles have been warmed up by the steam for five minutes, the tray is turned and the bottles immersed in the hot water, replace the cover immediately. This manipulation is to be made as rapidly as possible to avoid loss of heat. Thus it remains for thirty minutes.

Now take the tray out of the water and fasten the corks or stoppers air-tight. Cool the bottles with cold water, and ice as quickly as possible, and keep them at a low temperature until used.

While I do not consider this process quite as satisfactory as commercial pasteurization, still experience has shown that it can be done successfully, and the milk is much safer than if it had been used raw.

Pasteurization is becoming more popular throughout the country. A report by Bigelow and Forsbeck giving data from cities and towns in the United States shows that in 1927, 83 per cent of the milk in 44 cities was being pasteurized, as compared with 74 per cent in 1923, and 34 per cent in 1919.

It also shows that only one-half of one per cent of the milk is certified.

Certainly from a practical and financial point of view, we never will be able to get the entire milk supply in a condition that would qualify it as certified, then the only answer must be pasteurization.

CONCLUSION

From the data collected and studied, I believe physicians are not justified in recommending the consumption of raw milk.

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Skin and Mucous Membrane Manifestations of Late and Latent Syphilis

E. A. Pickens, M.D., Wichita

Read before the Sedgwick County Medical Society May 21, 1929.

The skin manifestations of late and latent syphilis are many and varied. The disease now has become less active and the cutaneous symptoms more destructive than the florid secondary eruptive period when the disseminate distribution is of a non-destructive character. These are generally referred to as recurrences rather than typical "late" lesions. The long standing untreated or insufficiently treated case presents a different group of symptoms; as time elapses, the lesions become more isolated or solitary and more destructive in nature. In the pathology of these lesions one sees the granuloma of syphilis most typically portrayed—the giant cells—the lymphocytic infiltration, some epithelioid and fibroblastic proliferation, peripheral obliterative endarteritis of the fine capillaries and arterioles, and softening and necrosis. In the earlier stages the profuse round-cell infiltration may suggest sarcoma. In the fully developed granuloma the picture may suggest, very strongly, tuberculosis.

The generally accepted rule that the secondary syphilides involute without leaving a trace of their presence has very definite exceptions in the atrophic and pigmentary residue. These being the most destructive of the latent period. The chief source of the residual changes is the large papular syphilide which often leaves on involution, a faint depression or macular atrophy at the site of the papular lesion, and when the atrophy fails to develop tends to leave a spot of depigmentation. The favorite site for the macular depigmentation is the side of the neck, the macular atrophy on the back and flanks. The former is called "syphilitic leukoderma" and is a highly characteristic lesion generally presented on the neck and shoulders. The best imitation of it is produced by the pigmentation accompanying the involution of an extensive psoriasis that has been treated with arsenic. But the macular spotting of the true syphilitc leukoderma is in contra-distinction to the patchy affairs of fawns and brown.

The classification of the lesions of the late syphilides that I like best divides the various lesions into the nodular nonulcerative, noduloulcerative, and gumma. When involution takes place in the nodular lesion it generally does not leave a trace though at times it leaves atrophy and pigmentation. The nodulo-ulcerative type will present the nodular infiltration accompanied by ulceration. At times they do not appear to be ulcerated but scaley or crusted, though on removal of the crust a punched-out ulcer is found. The ulceration will vary in extent and destructiveness in each lesion. Gumma develops as a cutaneous or subcutaneous tumor. At first pinkish, then red and soon a dark bluish tinge. General softening occurs or an ulcer develops in the center, rapidly spreading to the margins, discharging large quantities of grumous pus. Sometimes they involute without breaking down. Engman believes the physical characteristics are distinctive enough that one should be able to diagnose them with or without the aid of the Wassermann reaction. Stokes states that you should diagnose with these physical signs even in the presence of a negative

Wassermann reaction. All the granulomatous processes in the skin share some of these characteristics, but the most important combination is induration with arciform or polycyclic configuration. The indurated arc or scalloped chain should arouse suspicion. This arrangement of papules or ulcers and atrophic scars should receive careful consideration. The syphilitic ulcer in healing leaves an atrophic non-contractile scar. The ulcer located on the upper and outer aspect of the leg is more commonly syphilitic while those on the lower and inner aspect are more apt to be due to vascular stasis. The ulcers on the calves especially in women are more apt to be tuberculous and leave disfiguration on healing. The tubercular ulcer will be undermined at the edge—the syphilitic ulcer punched out. The therapeutic test, the administration of arsphenamin, is unreliable as these ulcers will all respond to this drug. If you feel the need of a therapeutic test mercury alone should be used.

Some of the more common skin conditions that have to be differentiated are psoriasis and seborrheic dermatitis. Some of the chief differential points are: Psoriasis is rare on the face although common in the scalp. Seborrheic dermatitis is common on both scalp and face although it is more greasy and oily, while syphilitic lesions are common on the face. The syphilitic lesions are indurated whereas the others are not and they spread with peripheral extension. Another point is that the syphilitic lesions have the central atrophy. The psoriases and seborrheic dermatitis are very scaley with typical distribution, quite commonly bleeding on the removal of the scales. In syphilis there is no bleeding and extremely few, if any scales, without bleeding when scraped off.

Ringworm is often confused with late syphilis. But the ringworm fungus can be found by maceration of the scales in 10 per cent—20 per cent sodium hydroxide—again the induration of syphilis being absent and the vesicles present in the ringworm will aid materially with the blood Wassermann reaction in making your differential diagnosis.

Some of the most difficult problems are in the diagnosis of the late syphilides of the palms and plantar surfaces. It is seldom there is any ulceration. You have to depend mostly on the configuration, induration and atrophy. The border of the palmar lesion is very noticeably indurated, can be easily palpated, having a cord-like feel to the palpating finger as you run your finger over the edge of the lesion, generally brown-like in appearance. The lesion presents the atrophic appearance—the well side showing the velvety rubbery texture of healthy skin while the lesion has the appearance of old skin—wrinkled, flaccid, atrophic, the skin of an old person giving the appearance of a difference of twenty years. These lesions are unilateral, seldom involve the back of the hands or feet, do not fissure or have vesicles. It is always well to examine the entire skin for other evidences. It is not uncommon that the blood Wassermann reaction is negative and that you have to do the "provocative." It is not impossible that this test be negative and that the lesion will "flare up" during the first twenty-four hours after the administration of arsphenamin and then rapidly disappear, this constitutes the therapeutic test and should be considered positive. In diagnosing these palmar lesions as being syphilitic you should be actuated by:

1—Induration, bordering the lesions.

2—The margin being circular.

3—Slight but very definite central atrophy, with no scaling and no organisms in the scales.

4—No vesicles either at the margin or central portion of the lesion.

5—Very definite line of demarcation.

6—Blood Wassermann reaction.

7—The family history—no pregnancies —or one or more spontaneous miscarriages.

8—As a last resort the provocative test and simultaneously the therapeutic test —local flare up.

LESIONS OF MUCOUS MEMBRANES OF THE MOUTH

There are several types of lesions of the mouth you are forced to consider. The most common that will be discussed are the syphilides of the lips which

should fall into the following classification:

1—The nodular and nodulo-ulcerative type.

2—The solitary and diffused non-ulcerative gumma. Also the lesions of the mucous membranes of the mouth, the most common being leukoplakia, carcinoma and the tubercular ulcers. Of these leukoplakia is the most common condition met with. There is one type of leukoplakia that is not considered in this discussion, it is of a thick, rough, sharply defined silvery-gray patch, though any and all leukoplakia should arouse a strong suspicion of syphilis. The leukoplakia most commonly confused with syphilis are the patches on the lip, just in the angle of the mouth and buccal mucous membrane. These lesions do not have the thickened base or the rough, sharply defined borders, but are more indefinite in their outline.

Irritation from bad teeth or tobacco in a syphilitic is prone to produce leukoplakia; a leukoplakial patch that is ulcerative is probably already malignant. It is important to remember that the lesions do not completely involute prior to malignant degeneration. Metastasis is very early from lesions of the mouth. A pathological examination of a section from all lesions prior to treatment even though the Wassermann reaction is positive should be done. In addition to the leukoplakia you have the tubercular ulcers in the mouth that can cause you lots of trouble in making the differential diagnosis but they are more ragged, will have minute tubercles at the highly inflamed margin, and the morphology is different, the arciform configuration being absent.

In diagnosing your early carcinomas it is well to examine the teeth for sources of irritation, examine the border of the lesion carefully for a pearly rolled edge as this is generally the way it is found in the early lesion. Examining the glands as metastasis is very early in carcinomatous lesions of the mouth, never omitting the pathological examination of a section.

In any lesion that has a rolled border, regardless of the configuration, you should suspect carcinoma, and lesions on the tongue should always be considered epithelioma until they have been proven otherwise. Should it be necessary to resort to the therapeutic test in making your diagnosis arsphenamin is acceptable as it does not effect an epithelioma. It may be well to state that some authorities question the advisability of taking specimens for microscopic examination on account of the flare-up that so often follows molesting these lesions.

There is so much more that might be said that has not been that I feel that I have hardly touched the subject. But in conclusion will add that there are a few points to remember:

1—Indolency of the lesion.

2—Induration infiltration of subcutaneous and connective tissue.

3—Configuration, arciform lesions, either single or multiple.

4—Margination, with peripheral hyperpigmentation and central healing leaving non-contractile scar.

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Physiotherapy

Fred C. Gasser, M.D., Cherryvale

Read before the Montgomery County Medical Society, March 22, 1929.

Physiotherapy as you all know is treatment for disease by physical means, in contradistinction to treatment by drugs, serotherapy, etc.

The chiropractor and osteopath are physiotherapists. They treat disease by physical means only, their hands, vibrators, colored lights, etc. Your fifth lumbar vertebra becomes dislocated and out of line and by a clever manipulation of his thumbs he speedily readjusts it and you are well again (?) Much in physiotherapy is of course plain quackery used for the purpose only of fooling the public. However, there is also much of physiotherapy that leading men now have accepted as being very valuable and filling a place in any practitioner's program. You are all acquainted with the *x*-ray of course and its uses. I shall not talk of this. Rather I'll say a few things of high frequency and the ultra violet ray generators. Aside from the *x*-ray these two phases are the most important in physiotherapy, all others are second-

ary. The high frequency current is one in which the frequency of oscillations is measured in hundreds of thousands or millions per second. (The common alternating current is a 60 cycle current.) At such a frequency of oscillations the human tissues cease to respond to each impulse and this point is somewhere above 30,000 per second. The high frequency current is therefore an electrical current of such high rate of oscillations that living tissues do not attempt to contract under each impulse. Therefore the passage of this current through tissue is painless, non traumatic and beneficial for a wide range of indications, whereas a like volume of current of low frequency would be extremely painful, traumatize muscles and fracture bones. In fact it would be deadly.

The ordinary 110 volt current is put through a step transformer of which there are several types and the high frequency current is produced. The most important use of this high frequency is for diathermy treatments. This is conversive heat. Energy transformed into heat in the body itself. Its proper use demands a knowledge of the physics involved, which is very exacting. Many things must be taken into consideration for each special treatment, whether direct or indirect diathermy is to be used, preparation of skin, proper electrodes, timeing of treatment, calculating the dosage, knowledge of indications and contraindications, etc. A very large majority of diathermy treatments are used for the sedative, absorptive and germicidal effects. Treatments are usually 20 to 45 minutes, or even longer in rare instances. As you may know the smaller electrode is used where the greatest density of current is desired and the other placed at the proper place to serve as a "ground."

It is indicated where any intense arterial hyperemia is desired as in muscle contractures following trauma to the nerve, where atrophy is to be arrested—chronic fibrosed joints which it is practically impossible to aid without diathermy.

Fractures repair in one-third less the time ordinarily required, when diathermy is used. The relief following the first treatment in an acute cystitis, prostatitis, epididymitis or orchitis is so great that all other methods of treatment or procedures for treating these conditions seem still more inadequate than they really are. Other methods of treating these conditions aside from diathermy are as you all know notably ineffectual. Pus with drainage is a good indication for diathermy. Angina pectoris is almost instantly relieved and if continually treated the attacks are cut down both in frequency and severity.

The use of diathermy in beginning pneumonia is followed by such sudden relief of symptoms and changes in the clinical picture presented that about the only criticism given by physicians seeing it properly used in the early stages is that the cases were not typical pneumonia cases any how. This is correct. They were not typical pneumonia cases because typical pneumonia is almost impossible where early diathermy is used.

Sedative diathermy is here used. Much discredit has been placed on the so-called electric treatment of pneumonia as well as for all other things. This is justified and the fault is in improper technic and worthless diathermy apparatus. This conversive heat is produced in the tissues through which it passes. An electrode at the front and back of the diseased lung and sedative diathermy applied once or twice a day is much more efficient and effective than jackets, poultices, etc. I have used the diathermy in two cases of pneumonia, both had bad hearts, were cyanotic and looked bad. However, both are well. I have personally not had the opportunity to use it much in pneumonia, mostly because it is so inconvenient to give in the homes.

Neuralgias are as a rule promptly relieved. I have found my greatest use of diathermy in treating neuralgias, especially lumbar neuritis and myositis. In fact I hardly would feel competent to treat these conditions without diathermy. It is not at all uncommon to have the patient "humped" over to one side, unable to straighten his lumbar spine, get on the table, take the 45 minute treatment and get up and straighten himself

and declare himself almost well. Where the neuritis is rather localized so the treatment reaches it very direct the results are much better.

Here is an agent that will reduce blood pressure at once. Sedative diathermy, 300 or 400 milliamperes for 30 minutes each day, will reduce the blood pressure 20 or 40 points in the first week as a rule. After this first reduction in blood pressure we find that the following treatments average 2 or 3 points each. When the blood pressure has run below 200 it can usually be brought back to normal with a course of treatment. At the same time of course all that can be done for the kidney and heart by drug therapy must be done. After a few weeks of treatment the blood pressure is pretty well lowered, in fact about as far as autocondensation can do it. An occasional treatment here usually controls it. These results, however, can not be expected very often when the blood pressure has reached 250 or 300 mm. However, even in these very severe cases the results are often striking.

Prostate disease and seminal vesiculitis. Here is another condition I should feel quite incompetent to treat without diathermy. As you all know the generally accepted treatment is serum, massage and finally surgery. Removal of the large swollen vesicle. This is unnecessary when the diathermy current is passed through the vesicle a few times. Enough elevation of temperature can be put to the gland to kill all gonococci very quickly and the vesicles in practically all cases soon return to normal and function properly again.

Much experimental work is going on, finding new uses for diathermy. Many use it in nephritis and treat the kidneys directly, also catarrhal cholangeitis is said to respond very strikingly to diathermy. I have not tried it. However, as a rule any pathological condition where passive congestion and arterial engorgement is wanted and the circulation efficiency trebled, one can use diathermy in preference to any other measure. I have not taken up surgical diathermy or electro-coagulation. On certain selected cases needing tonsillectomy where surgery is contraindicated the tonsils can be safely congulated. I have done this only a few times and as I said before only when surgery is contraindicated. This is, however, another important use for diathermy. Bloodless surgery is very simple where one pole of this high frequency machine is connected with the scalpel and the foot switch used as needed. All bleeding points are quickly stopped—seared over—and are sterile. Ulcers of the cervix, where lacerations are not the cause, will heal usually after one light coagulation which is painless. Epitheliomas on the body almost anywhere are nicely coagulated and left to dry or slough off. This is usually the end of it providing the coagulation is thorough enough of course. I have coagulated external hemorrhoids painlessly and the results were all one could expect. No delay from work while healing. Many other indications and uses may be found and developed, things which heretofore were out of our reach and gave the chiros part of our business. These can be ethically treated now with physiotherapy.

CONTRAINDICATIONS

Two general rules: 1. Where there is a liability to start a hemorrhage. 2. Where there is a liability to cause toxic absorption *i.e.* pus without drainage, in empyema, for instance, diathermy before drainage almost certainly sets up a septicemia and metastatic abscesses. However, empyema with drainage is usually quickly sterilized with diathermy. The effects of diathermy do not in the least depend upon any element of suggestion. They are positive physical effects. The next important phase in physiotherapy in my estimation is the actinic or ultra violet ray.

THE ACTINIC OR ULTRA VIOLET RAY

This has as you realize come to the front in the past few years so that it seems useless to say much of it. This ray lies just beyond the violet ray of the visible spectrum. It is an invisible ray and when a mercury quartz burner is lighted it is not the ultra violet ray that you see but a mixture of visible and non active rays. It is determined and classified by its wave length. We have the

mercury quartz burners today which are transparent to all wave lengths of the actinic ray and the more effective short waves are transmitted through it without interruption. These tend to produce leucocytosis. The action of the ultra violet ray is manifested both locally and generally, locally by varying degrees of erythema and generally by various blood chemistry reactions which are decidedly beneficial. Since I have the ultra violet ray generator I feel that I can cure practically all skin affections that otherwise would be quite difficult to handle. One or two large doses causing decided erythema will invariably dry up eczema and cause the epidermis to scale off, leaving healthy skin underneath. Thus far the local reactions are used mostly for skin troubles and also it is being used by some in eye, ear, nose and throat work.

The general actions I'll discuss briefly: As before stated one of the things caused by actinotherapy is leucocytosis. This is beneficial in any pathological condition where one's resistance is to be raised. Care in its use must of course be used and a knowledge of its effects. In pulmonary tuberculosis while in the febrile state we hesitate very much to use it. However, in surgical and intestinal tuberculosis it is quite specific.

Rickets as you know is a disease due to shortage of fat soluble vitamin "D" found in butter, codliver oil and the ultra violet ray. Rickets readily responds to this simple, convenient method of treatment. It is getting to be quite customary to ray the babies during the dark months of the year. Thus for rickets the actinic ray is quite a specific. The percentage of ultra violet rays in the solar spectrum is 2 per cent, while that of the mercury quartz arc is 33 per cent. Therefore this is about 16 times more effective than heliotherapy. In conditions in which there exists a calcium deficiency, as in spasmophilia or tetany, again we find the ultra violet ray a specific: Summarizing we find that as a specific the ultra violet ray cures:

1. Rickets and tetany—deficiency diseases.
2. Surgical tuberculosis—bone, intestinal, glandular or peritoneal.
3. Dermatoses. This includes 25 different skin diseases.
4. Secondary anemias.

As an adjuvant to other treatment it has a much wider field, which is too large to be covered in this paper. It may be of interest to note a few things which have retarded the development of electrical therapeutics in the past.

1. That the effects of electricity were mainly psychical.
2. Misleading statements in some modern textbooks, probably copied from old works.
3. Lack of teaching in medical schools.
4. The prejudice against electrotherapeutics, due to irregular practice, inexperienced practitioners.
5. Lack of proper standardization of electrotherapeutic apparatus.

However, these unfortunate conditions are being "ironed out," many schools have already added this to their course of study and much post-graduate work is done each year so that physicians may acquaint themselves with this most valuable phase of medicine.

An Unusual Case of Acute Lymphatic Leukemia

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Acute lymphatic leukemia not infrequently offers considerable diagnostic difficulty, as these cases are found to vary quite generally in the course of their development.

Resembling an acute infectious process from the start, this progressively fatal disease is usually ushered in by a sudden onset with a high temperature, extreme prostration, an anemia that increases rapidly—with a tendency to hemorrhages, and a typical overwhelming predominance of lymphocytic cells in the differential leukocyte count.

A case was recently under observation that was quite unusual in its onset and ran a confusing clinical course.

CASE REPORT

J. P., a school boy, age 13 years, was admitted to Bell Memorial Hospital De-

cember 27, 1928, complaining of a lump in his chest, some shortness of breath and intermittent attacks of pain located deeply within his chest.

He gave a history of having had influenza one month prior to his admittance, with a past history and family history otherwise essentially negative. At the time of his illness, a bulging on the anterior chest wall was noted and barely perceptible. The bulging increased rapidly in size until he came to the hospital.

The physical examination on admission revealed a fairly well nourished boy without any temperature and ambulatory. There was noted a definite pallor to his skin. His tonsils had been removed. The chest was bulging anteriorly over the upper one-half of the sternum and this was externally most prominent in the region of the third interspace to the left of the sternum. Here, the protrusion resembled an inverted tea cup 4 cms. in depth with an approximate diameter of 5 cms.

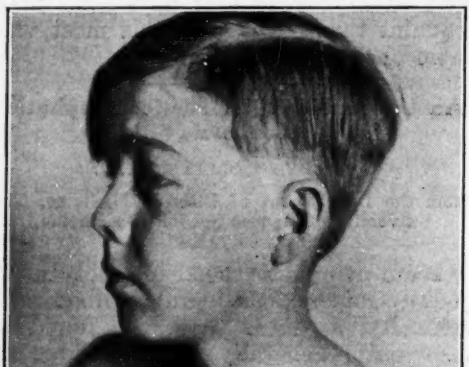

Fig. 1. Picture of patient on admission, note swelling to left of sternum.

On percussion the sternal dullness was increased to the right and left about 2½ cms., over which dullness no breath sounds were auscultated and a mediastinal mass was assumed to occupy this region.

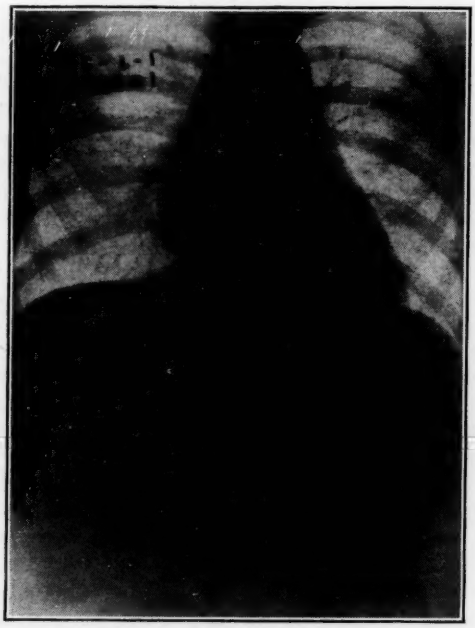

Fig. 2. x-Ray picture of chest, large mediastinal mass.

The cardiac dullness was found definitely displaced to the left. No regional adenopathies were palpable.

The urine examination was negative. The red cell count was 3,610,000, white cell count 8,500 and hemoglobin 65 per cent. The *x*-ray department's diagnosis was: a "Mediastinal Neoplasm," probably Hodgkin's Disease.

Two *x*-ray treatments were given over the mass in five day's time. One-half an erythema dose through 4 mm. of aluminum filter was the dosage administered, with a complete disappearance of the mass externally and a marked reduction in the size within the mediastinum. A third treatment was given before his dismissal, January 13, 1929, and he was dismissed symptom free as regarded his complaints. The *x*-ray also showed complete disappearance of the mediastinal mass.

Second Admission. Thirteen days following this, he was again admitted, complaining of bulging in the right costal

margin in the axillary line, with some dyspnea and pain on deep breathing.

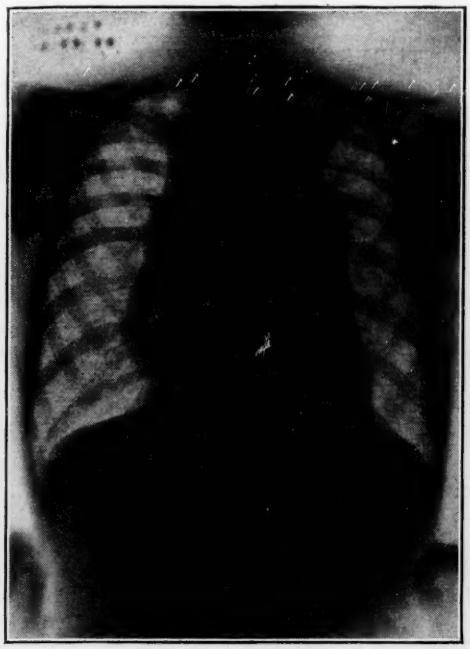

Fig. 3. x-Ray picture of chest following treatment.

There was an enlarged gland in each axilla. The skin pallor appeared the same. The liver was now palpable 3 cm. below the costal margin. An *x*-ray picture at this time revealed no recurrence of the mediastinal mass, but a little pleural thickening was noted at the right and left costal margins in the axillary line.

The urine contained albumin 1 plus and an occasional pus cell, while the red blood cells were 4,050,000, hemoglobin 74 per cent and leukocytes numbered 9,900.

One of the enlarged axillary glands was excised and the pathological diagnosis was lymphatic leukemia.

The next few days, the liver increased rapidly in size, reaching 3 cms. below the right costal margin, and the spleen became definitely palpable. In ten days time, other axillary, as well as inguinal, epitrochlear and cervical lymph glands became definitely palpable and continued to increase slowly in size. On the twenty-first day after his second admission, he began to bleed from the nose and gums, as well as vomit blood and showed blood in his stools. His urine at this time was brick red in color, containing an enormous number of red blood cells and many lymphocytes in a stained specimen. The blood examination showed: red blood cells 3,250,000, hemoglobin 60 per cent and leukocytes 98,450, with 96 per cent lymphocytic cells.

He continued to bleed from all mucosal surfaces, but to a lesser degree. His

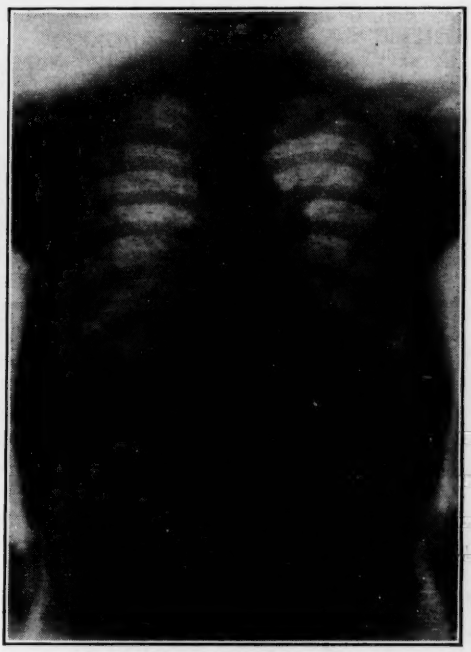

Fig. 4. x-Ray picture of chest on readmission.

weakness became extreme and a blood culture previously taken was reported negative. Numerous rales appeared in the right lower chest, with a loss of breath sounds below this level, with a diagnosis of fluid resulting. Numerous petechial hemorrhages were now noted all over the skin.

February 26 he had ceased bleeding from the nose, gums and mouth and there was a marked degree of blood in the urine. He was extremely exsanguinated and grew moribund. The red cells were now 1,400,000, the hemoglobin 27 per cent and leukocytes 86,000, with 80 per cent lymphocytes. He died apparently in a state of gradually increasing exhaustion.

The autopsy revealed the following anatomical diagnosis:

1. Acute lymphoid leukemia with infiltration into the heart, lungs, liver, spleen, kidneys, mediastinum and parietal pleura.
2. Petechial hemorrhages in the subcutaneous, subserous and submucosal surfaces.
3. Acute fibrinous pleurisy with hemorrhagic effusion into right pleural cavity.
4. Acute hemorrhagic nephritis.
5. Parenchymatous degeneration of the heart and liver.

COMMENT

The most interesting features of this case were, the large swelling and mass in the mediastinum (that was at first considered Hodgkin's disease) and the striking manner in which this bulging mass melted away under *x*-ray therapy.

The case later developed the typical picture of an acute lymphatic leukemia and ran a typical course.

The acute nephritis was unusual and the large amount of urinary blood was also a striking feature.

A case manifesting a posterior mediastinal mass with a delayed typical acute lymphatic leukemia picture was described by Dr. W. E. Fallis in the Kentucky Medical Journal, April, 1928. His case, however, stressed the symptoms produced by the mass pressing on the superior vena cava, necessitating frequent thoracentesis of the right chest to relieve the patient of dyspnea—his outstanding early symptom.

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TUBERCULOSIS ABSTRACTS

Modern plans for curbing the spread of tuberculosis consist of a combination of medical and social measures, which aim (a) to prevent infection and (b) to inhibit the development of actual disease, once infection has taken place. The techniques employed for achieving these aims vary in actual practice according to the viewpoints of the several workers and the peculiar situations of their communities. W. Bolton Tomson, M.D., in a recent book, "Some Methods for the Prevention of Tuberculosis," describes several outstanding measures employed in European countries, which illustrate various emphases on details of method.

FRANCE

Professor Grancher realized the possibilities of separating the newborn from its tuberculous mother, and, as the result of his labor, the *Œuvre Grancher,* a society for protecting children against tuberculosis, was established in 1903 and received governmental endorsement two years later. It arranges "for children from three to ten years of age who are not infectious to be placed out in country districts, where they are educated and stay until they are thirteen years of age." Over 2,500 children have been cared for, and during a period of over 17 years only 7 cases of tuberculosis were registered. The average cost per child is about one-sixth the cost of healing a tuberculosis patient in a sanatorium.

Another society, the *Placement Familial des Tout-Petits,* deals with children from birth. The newborn is isolated temporarily in a *creche,* or baby ward, for observation, then cared for at a Maternity Clinic for about three years, after which he is boarded out in a peasant family free from tuberculosis. Separation between mother and child is complete, excepting in rare instances where breast feeding seems essential. The mother is induced to give up her baby by kindly persuasion, but the surrender must be complete for a period of not less

than two years. Parents may make four visits to the child during the year. The foster parents are supplied with the infant's clothing, a cradle and a perambulator. They are bound by definite rules to care for the child as specified by the association and to bring the child periodically to the Centre for observation. The 1927 report of this society states

In the United States, preventoria provide protection for tuberculous children.

that of the 434 children dealt with, there were 19 deaths, only one of which was due to tuberculosis.

BELGIUM

The Belgian National League against Tuberculosis operates on principles similar to those employed in France. It receives financial aid from the government, municipalities, private donations, fetes, etc., and allots grants to its several branches on a per day, per child scale. Out of 3,000 children dealt with, only one has died from tuberculosis. As in France, many of the children placed in foster homes decide to remain in the locality of their adoption on reaching maturity.

SWITZERLAND

In Switzerland, the emphasis is on sanatoria and on preventoria. A federal subsidy helps to finance the plan of placing children in preventoria, and allotments are made to the institutions on a per child, per day basis. The results appear to be not so glowing as those reported from France and Belgium. For example, a study was made (terminating in 1923) of 323 patients from 3 to 25 years of age who had been inmates of the Sanatorium de Wald at Zurich:

Of 195 cases of mild severity, 8.7 per cent had died.

Of 31 cases of medium severity, 42.0 per cent had died.

Of 97 cases with severe lesions, 85.5 per cent had died.

Deep-rooted tradition, misplaced parental affection, and the absence of compulsory laws are said to make it difficult to secure proper care for children of tuberculous parents before it is too late. Recently, however, most people are realizing the significance of Grancher's principle, and the demand for preventorium care is rapidly increasing.

NORWAY

A Tuberculosis Act, passed in 1900, makes the notification of all cases compulsory. The doctor in charge is obligated to instruct the patient and to enforce the recommended precautions. If the patient is recalcitrant, he may be sent to a "Home for Consumptives," which is done particularly in cases where children are endangered, though the law does not yet permit the forcible separation of husband from wife. Each town and parish has its Tuberculosis Committee, responsible to a Central Tuberculosis Committee for the whole kingdom. Poor children of tuberculous parents are also placed in homes and institutions, in which case two-fifths of the cost is borne by the state, while the county and town in which they live bear the remainder. When the Tuberculosis Act was first enacted, no institution existed for isolating adult cases. The Norwegian Women's Health Association then collected funds and established, in 1903, a "Nursing Home for Tuberculosis" near Oslo, which has been followed by the establishment of 100 similar homes with a total of about 2,000 beds. Also, a special Home was opened for infants of tuberculous families, many of whom are received at birth. This is, in effect, the Grancher system, except that children are institutionalized instead of placed in private homes. Other devices, such as open air schools as we know them, are also in use. At present, an effort is being made to improve housing conditions

for, as the author says, the infection may be *minimized by dilution* to those who live in daily contact with an infecting agent.

SWEDEN

The system in Sweden is essentially like that of Norway. An excellent demonstration was recently completed. It

Model cottages occupied by ex-patients employed by Papworth Industries.

began in 1904 in a poor district of medium size, situated in a remote spot inhabited by a comparatively stationary population and infested with tuberculosis. Surrounding districts of similar types served as controls. The demonstration centered around a building serving as general headquarters, as well as a Cottage Hospital and Children's Home. In the twenty years' period, tuberculosis morbidity was reduced 33 per cent and the mortality 28 per cent, whereas practically no reductions were noted in morbidity or mortality in the control areas.

ENGLAND

In England, prominence is given to the view that infection may be prevented from developing into serious disease by raising the bodily resistance and by diminishing the strength or sizes of the infecting doses. Tuberculosis Village Settlements, such as Papworth at Cambridgeshire and Preston Hall at Aylesford, have demonstrated the feasibility of the idea. Papworth, established in 1916, is a colony or village settlement for tuberculous cases in the arrested or quiescent stage. The underlying idea is voluntary segregation. Training in some trade or craft is given while the colonist is under treatment or medical observation. Remunerative employment is offered, which enables the colonist to earn part of his income, the remainder being provided by the state as a subsidy. The colony provides at all times medical supervision and hospital facilities. Some of the colonists settle down with their families and remain for life. Thus, such a scheme provides medical care, remunerative occupation, and an optimistic atmosphere; the entire family may be supervised and the general public is protected.

In all countries, of course, general measures, such as education of the public, sanitary regulations, the encouragement of better living standards, etc., are not neglected. In the United States, the drastic method of separating children from their families is not acceptable, the development of colonies is in its infancy, and mandatory laws are not popular.

℞

Chronic Pentosuria and Migraine

Changes in diet did not appreciably affect the pentosuria in the case reported by Jacob I. Margolis, New York (J.A.M.A., July 20, 1929). Ingestion of amidopyrine markedly increased the output of pentose in the urine in direct proportion to the amount ingested. As no such occurrence was demonstrated in more than 100 normal and sick persons (including some with glycosurias), this effect of amidopyrine may possibly be utilized as a provocative test for chronic pentosuria. Intravenous injections of a typhoid bacillus vaccine caused a marked drop in the pentose and the nitrogen output in the urine on the same day, provided a severe general reaction took place. During this entire series of injections, there was little or no change in the average output of pentose. However, there were certain periods when the excretion of pentose was somewhat lower than had been previously present. These, curiously, coincided with the periods of temporary objective and subjective clinical improvement.

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ANOTHER SIDE TO THE PICTURE

The old country doctor, the favored theme for song and story, whom the children love, the fathers praise and the mothers almost worship, is but a sentiment or at best a faded memory. Those literary crowns of glory were never meant for present company. How easy and how kind it is to magnify the virtues of those no longer with us. But rarely does the poet see the other side of the picture in which, like Santa Claus, the country doctor's popularity ebbs and flows with the seasonal demands for his services and his generosity. One accepts the gifts from Santa Claus with little thought of the impoverishment his generosity may occasion. One accepts the services of the country doctor with little thought of his threadbare clothes, his slender purse and his unpaid bills. The service completed even Santa Claus forgets his office number.

There are countless numbers of people who most heartily welcome every opportunity to exemplify the spirit of Santa Claus, and to many of these wealth means nothing except by it Christmas cheer might be more generally and more generously distributed.

There are thousands who constantly exemplify the poet's ideal of the country doctor, to whom wealth means nothing except it afford the means by which the ills of human beings may be more generally and more generously relieved. To the poetic mind kindness rewarded is no longer kind. Generosity paid for is no longer generous. Charity that yields a profit is no longer charitable.

However, the economists insist that too much kindness is responsible for lack of discipline; too much generosity encourages dependence; and too much charity promotes pauperism. It is perhaps an economistic theory that fairness should take the place of kindness; that justice should take the place of generosity; and that charity should be regulated and controlled by organized groups of citizens and distributed according to accepted economic principles. The poet's ideal is not to be found in this scheme of things. The doctor is still there, his services are rendered as before, but his unselfish devotion to the relief of suffering has now been incorporated by various groups of by-standers and he finds his services ordered, or controlled, or interfered with, by representatives of the Honied-tongue Aid Society, The Scotch Association for the Prevention of Extravagance, the Anti-Hiccough League, and other like organizations that gather in considerable contributions for the maintenance of their administrative offices, for the necessary publicity and for the expenses of their visiting representatives. Under no circumstances, however, would they insult the professional dignity of the doctor who does the work by offering to pay him for the services he renders and for which they assume the credit. But he is not the country doctor the poets sing about, he has absorbed some of the theories of modern econo-

mists, has capitalized his knowledge and skill and demands a fair dividend from those who seek to benefit from them. The old country doctor disappeared with the horse and buggy. The doctor of today who happens to locate at a cross-roads has ready access to all the laboratory and hospital facilities of the nearby city, and in many instances becomes a better diagnostician and acquires a wider experience than the average of those who locate in the cities. But the doctor of today is never a proper theme for song and story. He is more competent and has accomplished more in the prevention and cure of disease than his prototype of the pre-automobile age, but there is nothing about his personality that is sufficiently striking or picturesque to excite the poet's fancy. Dramatic incidents occasionally vary the monotony of his daily run of duties, but these are rarely mentioned unless he has a particular "yen" for publicity. The spectacular operations, life saving feats and startling discoveries, mentioned more and more frequently in the daily press, are mostly very commonplace affairs which have been embellished for or by the newspapers that report them.

The doctors and their methods have changed, the people and their complaints have changed just as everything else has changed. But there are still a few who were born in the pre-automobile age and occasionally one who had intimate acquaintance with the country doctors the poets wrote about, and possibly his throat fills up and his eyes dim with moisture as he recalls how more than one of them became physical wrecks after years of mental strain and heart breaking toil and died in poverty and want unattended and unmourned, without ever having an opportunity to read one of these beautiful tributes to their self-sacrificing devotion to what they believed was their duty.

The following conversation was overheard in the post office at Nowhere one Christmas morning just ten years ago.

The Merchant—"Well I hear old Doc Goodman died last night. Widow Smith who lives next door took in some tea and toast this morning and found him dead. He'd been poorly for a few days and she had been taking him stuff like that. She said it looked like he might have got too cold, his fire was out and he didn't have much cover. I guess I ought to have paid him something, but he never sent me a bill."

The Banker—"Of course it's too bad. He was a good doctor but he didn't have any business sense. From the amount of business he had he ought to have been pretty well fixed. He was mighty careless. I guess I owed him about a hundred dollars but he never sent a bill or asked me for it. Well I suppose there is enough due him to pay for a good funeral."

The Merchant—"I know several that have owed him since the flu epidemic. They say he has never been strong since then. He was going night and day for weeks and some of the time had to walk ten or fifteen miles to get to the sick ones. Well so long."

———R———

GUEST PROGRAMS FOR COUNTY SOCIETES

During the past year a careful study of the reports from the various county societies in the state reveals a growing tendency to depend upon invited guests for their programs. Some two or three years ago a theory was advanced that members of a county society would not attend meetings unless some attraction was offered. The plan so generally adopted does appear to have solved the problem of attendance but it is doubtful

if it has added anything to the strength of the organization or has added anything to the scientific knowledge or professional ability of the members of those societies. One of the purposes of our organization is to encourage the members to improve their own scientific attainments.

One who believes that education can only be obtained in school will never become highly educated even if he spend his life in school. This applies especially to medical education. Post-graduate courses are of inestimable value if those who attend them compare the teachings there received with their own experiences and with the teachings of other men. The man who does not read the current medical literature and who can not apply a system of logical reasoning to the solution of his own medical problems must be regarded as unfortunate. There is something lacking in the educational curriculum of one who always quotes his favorite medical author or his most respected teacher, in his discussions of medical subjects. The most profitable post-graduate course one can take is to spend two weeks, or four weeks, in an intensive study of the cases he has had during the year, a study particularly of those cases that have puzzled him in their diagnosis and treatment. Such a course will give him more respect for himself and more confidence in his ability.

These programs for county societies that are furnished entirely by guests tend to create an inferiority complex in the members. Some of these have a more extensive and more definite knowledge of the subject under discussion than the lecturer himself, but they rarely if ever let it be known. Instead of discussing these papers and lectures they satisfy themselves with asking a few questions. These questions as a rule simply give the lecturer an opportunity to elaborate upon some points in his paper and in doing so further impress his superiority upon his audience. These guests do not come to a meeting unprepared. They usually choose the subject with which they are most familiar or which they have most recently studied and whether their performance be a lecture or the reading of a paper, it has been very carefully prepared. To its preparation much time and study has been given, the same amount of time and study that would have enabled most any member of the society to present an equally good paper or lecture.

There are perhaps in St. Louis, in Oklahoma City, in Denver ,in St. Joseph and in Chicago men who will accept an invitation to address the members of a county society simply because he has some advanced knowledge to bring to the profession, but seventy-five per cent of those who accept these invitations expect in doing so to build up their own reputations and their drawing power. And if one will take the pains to read between the lines as one of these addresses is being delivered he will find constantly reiterated "This is a very delicate maneuver" or "This is very difficult to accomplish, but I am always available." It is the best and almost the only method of advertising open to ethical men in the medical profession.

These guest programs may be keeping up attendance but they are not carrying out one of the most important purposes of our organization. They offer no encouragement to the member who is doing original work to offer his observations to his colleagues for their discussion or criticism. They offer no encouragement to members who could intelligently discuss the subjects presented. But, on the other hand, they actually discourage these things. There is therefore

less respect for each other among the members of the society, less confidence in each other's ability and a good many cases are sent away that could be cared for just as well and perhaps better at home.

A careful study of the histories of a few county societies suggests some of the reasons for failure in attendance when the members only are on the program. No one feels repaid for listening to a paper that has been prepared a few hours or minutes before the meeting. No one feels repaid for the time and effort required to prepare a really good paper and have no discussion of it after it is presented. That explains the situation that exists now in many societies, and explains why a number of good societies have failed. The situation, however, is one that can be remedied if the officers of the society are sufficiently alert. There are very few members of a county society who will shirk a duty assigned them and in some active societies an effort is made to assign some duty to every member. Most members will take a part in the discussion of papers if asked to do so, particularly if they are asked long enough before the meeting to enable them to prepare for an intelligent discussion. In order to encourage the members to prepare good papers it must be known that those papers are sure to be discussed by the other members who have prepared themselves before hand. It is therefore suggested that some member be selected to prepare a paper and that he be given sufficient time to do it well, and that at least one week before the meeting at which it is to be presented, several or all of the other members be notified by the secretary that they will be called upon to discuss the paper or the subject. If this plan should be pursued for a while some unexpected talent will be discovered in several of the county societies in Kansas.

CHIPS

The conclusion is reached, from a recent article by Boyd, Melgram and Stearns, that in clinical hyperparathyroidism there is an excessive elimination of calcium salts in the urine, with increase of the serum calcium concentration. The bone salts are mobilized and varied types of bone dystrophy may result. In an article by Abelin, published in 1928, some studies on the influence of calcium and phosphates on rats with hyperthyroidism experimentally produced were reported. The administration of phasphates increased the efficiency of the thyroid substances, while that of calcium salts diminished it. The calcium salts seem to have a specific influence on thyroxin only. It is suggested that there is an antagonism between thyroid function and excess of calcium and that this antagonism may play a role in the etiology of goiter. From these two findings one might suspect the possible implication of the parathyroids in the cause of hyperthyroidism.

Iodine, or iodine containing substances, seems to have been used in the treatment of goiterous enlargements of the neck for many centuries. Its effects were varied and uncertain and for a time it was regarded as unsafe. Comparatively recent investigations have rationalized its therapeutic use in hyperthyroidism but with fairly definite limitations. Menne, in the *Archives of Pathology* for December, has reviewed the literature on the subject and has reached the conclusion that the changes produced by iodine correspond to the natural regressive processes of variable activities of thyroid gland in health and disease. There is a progressive development of intracinar colloid, an ironing out of the papillary infoldings, a marked reduction in the hyperplasia and hypertrophy of the epithelium and the development of more uniformity in the sizes of the alveoli. The longer the administration of iodine the greater the accumulation of colloid as a rule. But over-iodinization with a continuance of the etiologic factors results in a hyperplasia and hypertrophy that break through the colloid resistance,

and these areas are the source of marked hypersecretion.

In the December number of the *Archives of Surgery* there are several articles on abscess of the lung, with special reference to post-operative abscess. The authors of these papers have been engaged in clinical and experimental studies of this subject and although the concensus of opinion is that emboli are more likely to be responsible for the abscess, a bronchogenic infection must also play some part. Taken all in all the etiology of post-operative pulmonary abscess is still a problem. These papers were part of the program of the American Association for Thoracic Surgery and in the discussion by various members of the Association one notes the same differing opinions concerning the relation of anesthesia to the occurrence of pulmonary abscesses. One reports the finding of blood in the lower respiratory tract after tonsillectomies done under local anesthesia; another asserts that there is no aspiration under local anesthesia.

It is suggested by Wildegans that instead of emphasis being put on disturbances of the circulation, infection or alteration of the walls of blood vessels to explain postoperative thrombosis and embolism, attention ought to be directed to the modification in the physical and chemical constitution of the blood. It was suggested by Von Seeman that after operations there is an excess of globulin and fibrinogen in the blood, resulting from wound exudates and damaged tissues. A further suggestion might be made that the solution of the problem might be aided if it could be determined how frequently postoperative thrombosis or emboli occur, which do not cause clinical manifestations of any definite character.

———R———

DR. JAMES W. MAY

A Personal Appreciation

"I weep for Adonais—he is dead!"

I knew Doctor May throughout his whole professional life. My acquaintance with him was not so intimate, of course, as was that of his immediate associates. But meeting him, as I did, not infrequently year by year, I was afforded ample opportunity to appraise the man and thus to get a good perspective of his character. So I feel that I knew him well. Indeed, I came to have a very fraternal feeling for him. For one could not know him well without warming toward him with a sort of real affection. His nature was so buoyant, his countenance was so frank and friendly, his whole person so animated with good feeling that one could not fail to respond to such a kindly influence. Of course I do not mean that he was never serious. He was that, too, especially if a friend were in trouble, or other grave considerations were in hand. But withal, he was essentially optimistic, and could infect any company with the contagion of his own good cheer.

He could also be very partisan on occasion. And this does not detract from the estimation in which I held him. It simply displays a very human side of his nature. He would join a campaign with eagerness and ardor to put over some cherished project or to advance the interests of some friend. And in the jostling that ensued he sometimes would receive as well as inflict petty wounds. But any resentment that naturally may have thus resulted was quite transitory, and the friendships with those who incidentally opposed him were seldom more than momentarily interrupted.

I shall not attempt to discuss my friend's professional talents and accomplishments. Many who are better qualified stand ready to testify in his behalf along these lines. That he was a wise, skillful and experienced physician is widely conceded.

I prefer to depict here, in my poor way, his qualities as a man, as a citizen and as a friend, for these are the qualities for which he will be longest remembered. He was such a man as is not too common these days — clean, upright, home-loving, generous. He was such a citizen as his city, state and country may well be proud of—loyal, law-abiding, public-spirited, patriotic. He was such a friend as any one should rejoice to have —kind, sympathetic, helpful, loving. He was very human, as I have said, and so

perhaps not without faults. But they were "not grave faults to you and me, but just odd ways, mistakes, or even less, remembrances to bless."

How we shall miss him where so long we have been wont to find him! How we shall feel the ache of so long a parting!

I wish that I had the power to pay more adequate verbal tribute to my lamented friend. But the words at my command fall far short of telling what my heart would say. Perhaps, in closing, I may be allowed to use some of the beautiful lines from Shelley's elegy on the death of his friend, John Keats:

"He is made one with Nature. There is heard
His voice in all her music, from the moan
Of thunder to the song of night's sweet bird.
He is a presence to be felt and known
In darkness and in light, from herb and stone—
Spreading itself where'er that Power may move
Which has withdrawn his being to its own,
Which wields the world with never-wearied love,
Sustains it from beneath, and kindles it above.

"He is a portion of the loveliness
Which once he made more lovely. He doth bear
His part, while the One Spirit's plastic stress
Sweeps through the dull dense world; compelling there
All new successions to the forms they wear;
Torturing the unwilling dross, that checks its flight,
To its own likeness, as each mass may bear;
And bursting in its beauty and its might
From trees and beasts and men into the heaven's light."

Jan. 6, 1930 O. P. D.

SOCIETIES

HARPER COUNTY SOCIETY

The Harper County Medical Society met in Anthony, December 11, at 7 p. m. Dr. E. S. Edgerton of Wichita, president-elect of the Kansas Medical Society, was guest of the evening. The following program was carried out:

Benign Prostatic Hypertrophy, Eastman Medical Film, Dr. A. E. Walker, Anthony.

Prastatic Therapeutics, Dr. Hartman, Anthony.

Prostatectomy, Technic and Results, Dr. E. S. Edgerton, Wichita.

The papers were discussed by Dr. A. R. Hatcher of Wellington, Dr. Gilbert of Medicine Lodge, Dr. Dillon of Wellington and others.

The following officers were elected for the ensuing year: President, Dr. A. E. Walker, Anthony; Vice President, Dr. J. G. Walker, Attica; Secretary-Treasurer, Dr. E. E. Hartman, Anthony.

A. E. WALKER, Secretary.

MITCHELL COUNTY SOCIETY

Mitchell County, Beloit, Kansas, has a fine new modern hospital. In spite of threatening rain or snow, about 800 people were present at the dedication and reception of the $250,000 hospital and nurses home at Beloit, December 11, 1929. This hospital will serve an area within a thirty-five mile radius from Beloit, and was made possible by the Commonwealth Fund of New York City contributing two-thirds of the necessary funds.

This is one of five such hospitals which are being established in U. S. A. from this fund in like manner. Dr. Jackson, former A.M.A. president from Kansas City, Mo.; Dr. Brown from State Board of Health, Topeka, Kansas; Judge Dawson of the Supreme Court, Mr. Smith and Mr. Southmaid of New York City; Mr. Kazey, former minister to Finland, now of Beloit, were among the speakers in the afternoon.

The Mitchell County Medical Society were hosts at a banquet for about sixty, held at the Avenue Hotel in the evening and the speakers of the afternoon gave after dinner talks with the exception of Judge Dawson who was obliged to leave early. The afternoon program was sponsored by the Solomon Valley Medical Society.

MARTHA M. MADTSON, M.D., Secy.

FORD COUNTY MEDICAL SOCIETY

The Ford County Medical Society met at Saint Anthony's Hospital in Dodge City, Kansas, Friday, December 6, 1929, at 7:30 p. m. for the annual election of officers. Officers elected:

Dr. G. O. Speirs, Spearville, Pres.; Dr. C. E. Bandy, Bucklin, First Vice Pres.; Dr. J. W. Spearing, Cimarron, Second Vice Pres.; Dr. W. F. Pine, Dodge City, Sec.-Treas.; Dr. R. G. Klein, Dodge City, Delegate to State meeting; Dr. W. O. Thompson, Dodge City, Alternate to State meeting.

No program had been provided for this meeting, but a general discussion for the good of the society followed the election.

An educational program for the year 1930 was thought advisable through the use of paid space used in the daily press, and a committee was named by the president to work out a satisfactory, ethical educational campaign.

The next meeting to be held Friday, January 10, 1930, when a dinner will be served the members and invited guests, and a speaker from out of town provide the program.

Beginning February 7, 1930, meetings will be held the first Friday of each month.

W. F. PINE, Secretary.

CLAY COUNTY MEDICAL SOCIETY

The December meeting and election of officers of the Clay County Medical Society was held at the Clay Center Hospital, Wednesday evening, December 11, 1929. The election of officers resulted as follows:

President, C. C. Stillman; Vice President, Robt. Algie; Secretary, X. Olsen; Treasurer, F. R. Croson; Member Board of Censor for three years, W. R. Morton; Delegate to State Society, R. J. Morton.

Reports of the Secretary and Treasurer were read and approved. These reports showed that all but one of the available physicians are members of the County Society. Three members live outside of the county. Total membership is twenty-one. There has been nine meetings held during the year, all of which have been well attended, and the programs, without exception, have been made up of talent of which any county society may be proud.

The program for the December meeting was a clinic and lecture on Chronic Arthritis by Dr. Russell L. Hayden of Kansas City. This was fully up to the standard and was greatly enjoyed by the doctors present.

X. OLSEN, Secretary.

WILSON COUNTY SOCIETY

The Wilson County Medical Society met at the Brown Hotel at Neodesha, Monday evening, December 13, and after supper was addressed by Dr. L. S. Cox on the work being done in several counties in the examination of children. Dr. Cox had held a tuberculosis clinic at Fredonia that day.

Election of officers resulted as follows: Dr. C. H. Dewey, Elk City, President; Dr. F. M. Wiley, Fredonia, Vice President; Dr. E. C. Duncan, Fredonia, Secretary-Treasurer; Dr. F. M. Wiley, appointed on Necrology; Drs. B. R. Riley, Benedict, Dr. A. P. Williams, and Dr. J. W. McGuire, Neodesha, Board of Censors. Dr. B. P. Smith, delegate, and Dr. E. C. Duncan, alternate, to State meeting at Topeka in May.

We always adjourn at 9 p. m., there being time yet at our disposal, the President gave each member seven minutes to unload anything he might want to talk about, and each member used his seven minutes.

Next meeting in Fredonia second Monday evening in January.

E. C. DUNCAN, Secretary.

GOLDEN BELT SOCIETY

The Golden Belt Medical Society met at the Bartell House in Junction City, January 2. There were about thirty in attendance.

Dr. W. C. Menninger of Topeka gave a very interesting talk on "Epilepsy of Congenital Syphilitic Origin," reporting the results of some extensive research he had been conducting. It was his opinion, which seemed to be justified by the data accumulated, that idiopathic epilepsy frequently occurred in people in whom congenital syphilis could be definitely diagnosed and that it should be regarded as an etiologic factor.

Dr. B. A. Poorman of Kansas City, Missouri, gave a lecture on "Gall Bladder Surgery" in which he called attention to diagnostic as well as operative methods and described the operative technic in considerable detail.

Dr. V. E. Chesky read a paper on "Carcinoma of the Large Intestine" describing the pathology, symptoms and methods of differential diagnosis. A cure in these cases was possible if removal of the growth preceded metastasis.

Dr. R. C. Lowman of Kansas City, Kansas, read a very interesting paper on "Goitre."

The guests were entertained at dinner by the Junction City members.

JACKSON COUNTY SOCIETY

The Jackson County Medical Society met in the Memorial Hall, Holton, Kansas, at 7:30 p. m., December 12, 1929.

Motion was made and seconded that Dr. James M. Wright, Denison, Kansas, be accepted into the membership of the County Medical Society.

Election of officers for the year 1930 resulted as follows:

E. W. Reed, president; M. Shoyer, vice president; C. A. Wyatt, secretary-treasurer; M. S. McGrew, delegate; J. B. Smythe, alternate; E. W. Reed, C. W. Reynolds, M. Shoyer, censors.

Members present were Drs. M. S. McGrew, M. Shoyer, J. B. Smythe, E. W. Reed, C. W. Reynolds and C. A. Wyatt.

C. A. WYATT, Secretary.

DEATHS

Harry Bowman Felty, Abilene, aged 60, died in April from a self-inflicted bullet wound. He graduated from Jefferson Medical College, Philadelphia, in 1892.

Harry S. Durrett, Ellis, aged 77, died August 13, in Hays of carcinoma of the pancreas. He graduated from Louisville Medical College in 1879.

James C. Preston, Buffalo, aged 66, died September 19 of acute nephritis. He graduated from the Medical Department of the University of Tennessee, Nashville, in 1885.

Dr. James Whittier May, Kansas City, aged 50, died at Bell Memorial Hospital, on December 19, of pernicious anemia with degeneration of the spinal cord. He graduated from the College of Physicians and Surgeons, Kansas City, Kansas, in 1900. Dr. May was editor of The Journal for six years, was elected president of the Society at the annual meeting at Topeka in 1916. He was for twelve years professor of clinical ophthalmology in the University of Kansas School of Medicine.

Fay P. Clark, Kansas City, aged 57, died December 15 as the result of *x*-ray burns received many years ago. He graduated from the College of Physicians and Surgeons, Kansas City, Kansas, in 1898. He was one of the pioneers in roentgenology. Had been a member of the staff of Bethany Hospital and was a member of the Society.

BOOKS

Clinical Obstetrics by Paul T. Harper, M.D., etc., clinical professor of obstetrics, Albany Medical College. Published by F. A. Davis Company, Philadelphia. Price $8.00.

The author has given special attention to the obstetrical problems and has endeavored to stress the principles involved rather than the procedures that may be or should be carried out. This idea is noted in his discussion of the mechanism of labor which should be appreciated by the reader. The illustrations are largely diagramatic and seem to fulfill the purpose for which they were intended.

Hemorrhoids, the injection treatment and pruritus ani by Lawrence Goldbacher, M.D. Published by F. A. Davis Company, Philadelphia. Price $3.50.

In this book the author has very carefully explained the injection treatment of hemorrhoids, has both described and illustrated the technic in such a manner that it should be easily followed.

Synopsis of the practice of preventive medicine as applied in the basic medical sciences and clinical instruction at the Harvard Medical School. Published by the Harvard University Press, Cambridge.

This book was prepared particularly as a suggestion to teachers in various departments of medicine as to how they can best emphasize such preventive measures as may come within the scope of their courses of instruction. It seems to have been very carefully developed and should be of considerable value to teachers as well as pupils.

Bacteriology for Nurses, a handbook by Harry W. Carey, M.D. Third edition. Published by F. A. Davis Company, Philadelphia. Price $2.25.

The author has rewritten the text adding whatever new material was available and enlarging the scope of the work to meet the requirements of the National

League of Nursing. There are several lists of questions, one at the end of each chapter intended to facilitate a general review of the subject.

The Volume of The Blood and Plasma in Health and Disease. By Leonard G. Rowntree, M.D., and George E. Brown, M.D., Division of Medicine, The Mayo Clinic and The Mayo Foundation, Rochester, Minnesota, with the Technical Assistance of Grace M. Roth. 12mo 219 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1929. Cloth, $3.00 net.

The authors attempt to show the value of the study of the blood volume and plasma volume in clinical medicine. They believe it is possible without injury or harm to the patient, to determine the nature and extent of changes in the volume of plasma and blood in various diseases, and to ascertain the role these changes play in the causation of various signs and symptoms. The dye method has been used to considerable extent by them and they believe it is a satisfactory method. They have made more than 1,000 determinations in a series of more than 350 clinical cases during the past six years.

The Medical Clinics of North America. (Issued serially, one number every other month.) Volume 13, No. 3. (New York Number, November, 1929.) Octavo of 272 pages with 58 illustrations. Per clinic year, July, 1929 to May, 1930. Paper, $12.00; cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company.

Held and Goldbloom discuss at considerable length the functions of the gallbladder. Tinney, Lintz, Jessup and Brooks have an article and case reports on pernicious anemia. Cannon describes the dermatologic conditions as seen in children. Bullowa discusses the serum treatment of the pneumococcus pneumonias. Pardee has some remarks on the importance of the etiology in the diagnosis of heart disease. Brock reports a very interesting neurological clinic. Pugh talks about blood in the urine, and Elwyn presents the diagnosis of nephritis. Ramirez talks about bronchial asthma as does Baldwin also. Caro and Riordan discuss varicose ulcers and eczema. There are several other quite interesting articles.

The Surgical Clinics of North America. (Issued serially, one number every other month.) Volume 9, number 6. (Lahey Clinic Number—December, 1929) 188 pags with 51 illustrations, and complete index to volume 9. Per clinic year (February, 1929, to December, 1929.) Paper, $12.00; cloth, $16.00. Philadelphia and London.

Apathetic thyroidism as distinctive to activating thyroidism is the subject of Lahey's opening article in this number of the Clinics. This is followed by articles on various phases of the subject of goiter, by Clute, Hurxthal, Mason, Cattell and another by Lahey. Sise discusses spinal anesthesia and two of the new anesthetics. Jordan discusses surgical indications in cancer of the stomach. Keifer discusses the effect of the alkali treatment of peptic ulcer upon the kidneys. Adams reports some toxic effects following the use of the Graham test. Cattell reports some complications following the injection treatment of varicose veins. Haggart discusses low back pain from lumbosacral anomaly. There are several papers by Lahey, Clute, Mason and Cattell.

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Physical Examination of Aeronauts

All applicants for federal pilot licenses, either for flying or for training as pilots, must pass physical examinations before physicians designated by the Secretary of Commerce. They must likewise be re-examined periodically. These examinations cover a rather detailed examination of the eyes, a brief examination of the ear, nose and throat, equilibrium, a general physical examination, and a detailed examination of the nervous system. There are now about 750 medical examiners so designated throughout the country. All these examinations are reviewed in Washington where the applicant is finally certified as qualified or disqualified for the grade for which he has applied.

In approval of the scope of the examinations required the American Medical Association, at the annual meeting in Portland, adopted the following resolutions:

Whereas, The Aeronautics Branch, Department of Commerce, has organized a medical service for the physical examinations of civil pilots and prospective pilots, in the interests of safety; and

Whereas, The physical standards adopted are in keeping with those adopt-

ed universally, and have reduced aircraft accidents from physical causes to a minimum; and

Whereas, The department has required these examinations to be made only by designated physicians in the interest of uniformity and control and in accordance with the custom adopted for the Army and Navy and in other countries; and

Whereas, The selection of examining physicians by the department has been based on training as flight surgeons or its equivalent, or on group examinations by specialists, a high standard of examination has resulted; and

Whereas, The department requires that all examiners hold the degree of Doctor of Medicine, be licensed to practice medicine under the laws of their respective states, and further requires that the appointees be recognized as ethical practitioners in their respective localities, thereby supporting the high standards advocated by this Association, be it

Resolved, That the American Medical Association at its stated assembly in 1929 endorses the medical work of the Department of Commerce, its methods of physical examination and its method of selection of medical examiners, and urges that the same high standards be continued and offers the support of the American Medical Association in furthering the specialty of aviation medicine; and be it further

Resolved, That a copy of this resolution be sent to the President of the United States, the Secretary of Commerce, and the Secretary of each state medical society.

The True Story of Acterol

(for additional details see the Mead Johnson announcement in this issue and also watch for special color supplement, Journal American Medical Association, January 18. All Mead Products are Council-Accepted.)

Chemists call it by its correct chemical name, *solution activated ergosterol*—the name by which Mead Johnson & Company first supplied it.[1] The largest manufacturer of rare sterols in America, early having activated cholesterol[2] (1925), being first to commercially produce pure ergosterol[3] and to standardize activated ergosterol[1,4] (October, 1927), seeking to protect themselves and the medical profession against substitution, Mead Johnson & Company coined the name *Acterol*—signifying *activated ergosterol.* The Council on Pharmacy subsequently coined a name, *Viosterol.* As servants of the American Medical Profession, this Company cheerfully defers to its wishes and now call its product Mead's Viosterol in Oil, 100 D. The product remains the same: only the name is changed.

REFERENCES

1. J. Biol. Chem., 76:2.
2. Ibid., 66:451.
3. Ibid., 80:15.
4. Ibid., 76:251.

Tucker's Asthma Specific

The continued exploitation of this cocaine mixture is a standing disgrace to the federal authorities. The nostrum carries a label admitting the presence of 5 grains of cocaine to the fluid ounce. When the Commissioner of Internal Revenue was asked in 1922 how such a product could be sent without violating the Harrison Narcotic Law, his reply was that the cocaine in the remedy became hydrolyzed before it reached the public, and that when used there was either no cocaine or a very small quantity. This commissioner, at the same time, also gave a fulsome puff for the nostrum expressing the opinion that the mail-order distribution of this product served "a great humanitarian cause" and, for that reason, the Treasury Department was taking no action. This in spite of the fact that the product obviously violates the Harrison Narcotic Law, for if it does not actually contain cocaine it admittedly contains a derivative of cocaine, to which the law also applies. Furthermore, if the product does not contain 5 grains of cocaine to the ounce, then it violates the National Food and Drug Act. (J.A. M.A., Dec. 7, '29.)

The Etiology of Influenza

I. S. Falk and his colleagues publish a preliminary report of their work on the etiology of influenza which does not go far beyond previous research on in-

fluenza. The difficulty in interpreting the results is largely due to the fact that it is difficult to distinguish clinical epidemic influenza from acute respiratory infections in monkeys and, indeed, in man. In 1892 Pfeiffer described an organism as the causative organism of influenza and since that time other allegedly causative organisms have been described. The green producing streptococcus isolated by Mathers and Tunnicliffe in 1918, the one isolated by Rosenow in 1919, the filter passing organism described by Meyer in 1919, and the organism discovered by Olitzky and Gates called *Bacterium* pneumosintes, would seem to deserve as much consideration as should be given, at least on the basis of the available evidence, to the germ recently announced by Falk. (J.A.M.A., Dec. 28, '29.)

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Medical Treatment of Cataract

About every five years, the ophthalmic world is thrilled by the announcement of a new medical cure for senile cataract. This has been going on for at least two hundred years. Boric acid and glycerine, ethylmorphine hydrochloride, subconjunctival injections of mercuric cyanide, radium, antigenic injections of lens proteins, mixed endocrine glands, sodium iodide in all possible combinations, and so on have all had a trial. Not one of them has been scientifically established as of value and more cataracts are being operated on than ever before. (J.A.M.A., Dec. 14, '29.)

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Undulant Fever

Goats, pigs, sheep and cattle are known to suffer from infections with closely related bacteria which belong to the genus Brucella. The general name Brucelliasis is therefore given to all of these infections. While each of these kinds of animals is commonly infected with its own strain, it sometimes happens that one kind may be infected with the strain characteristic of one of the other species.

Human beings may acquire these infections from the quadrupeds mentioned, either by direct contact in caring for or slaughtering them and dressing their carcasses. There is good reason for believing that some cases are due to drinking the milk of infected animals.

The prevalence of these infections of persons differs greatly in different parts of the world, as does also the prevailing source of the infection. For example, in the Mediterranean area, human infection with the goat disease is common, and is known as Mediterranean or Malta fever. While there have been cases and outbreaks of the goat infection in the United States, it is not at present the prevailing type.

The figures are as yet too incomplete to enable us to state with confidence the strain of the germ responsible for the common human brucelliasis in the United States. Inasmuch as cows are sometimes infected with the porcine strain, they may be the immediate means of conveying this type of infection to man.

These infections in man could properly be called brucelliasis as they are in the animals, but on account of one fairly common characteristic the disease is commonly called Undulant fever when it occurs in man, due to the undulating or wave-like up and down course of the fever and other symptoms. One attack follows another with intervals of relative freedom. The death rate of this disease is not high, but the degree of disability caused in the individual is often great. Some times the infection consists of only a single attack but in other cases it clears up permanently only after several years of greater or less suffering and disability. Up to the present time no specific treatment or cure has been discovered.

Studies are now being conducted to determine the sources of the infections. These apparently differ in different areas. In some, the cases are mostly traceable to caring for pigs or cattle or handling their carcasses. In others the chief source apparently has been drinking the milk of cows from infected herds.

Preventive measures must include an attempt to eradicate the disease from hogs and cattle, and pending the accomplishment of this result, measures to protect persons from infection while handling animals or their carcasses, and measures to prevent milk transmission.

While under favorable conditions it may be possible to eradicate the disease from a given herd within a few years, it is foreseen that the general elimination of the disease from the cattle and hog population throughout the country will be a slow process. In the meantime we have in pasteurization an effective means of avoiding infection through milk.

Undulant fever is not so prevalent as to constitute a major health problem. There is no cause for undue excitement. Nevertheless there are far more cases than were recognized a few years ago, and it is well to take such precautions as may reasonably be observed. As concerns the pasteurization of milk, undulant fever is only another reason added to equally important ones for protecting the public by employing this measure as regards the great bulk of market milk. The Public Health Service maintains that milk should be produced and handled under strict sanitary precautions before it is pasteurized.

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Prevention of the Spread of Contagious and Infectious Diseases In Interstate Commerce

The work of the Public Health Service in connection with the control of the interstate spread of disease is explained in a report recently made to Congress by Surgeon General H. S. Cumming.

The eighty-three county health departments which were established in the area affected by the Mississippi flood of 1927 have been effective in averting outbreaks of disease which threatened to follow the wake of the flood. The success of this plan in meeting such an emergency has attracted the favorable attention of health authorities in this country and abroad.

As a result of more than fifteen years' experience in endeavoring to apply practical public health knowledge to the community and the home, public health authorities are agreed that the best results can be secured through the establishment of whole-time local health service in the rural sections where such work is most urgently needed. County health organizations provide the machinery through which all public health activities may be conducted in proper sequence and in proper relation one to the other, thereby insuring to communities a well-balanced, comprehensive and general program of public health work well adapted to their needs. They also afford the best practicable means for preventing the interstat and intrastate spread of disease.

During the fiscal year just completed, the Public Health Service co-operated in 204 counties located in 17 states. At the present rate of progress, however, about 51 years will re required before all the rural communities in the United States will be receiving adequate health service, the lack of which is now responsible for an annual economic loss of more than one billion dollars.

The trachoma eradication work conducted by the Public Health Service was continued during the past year. Three small trachoma hospitals have been in operation in three states. The establishment of several county health departments in trachomatous areas has aided greatly in the location and follow-up of cases and in the dissemination of knowledge regarding the prevention and eradication of this disease.

Satisfactory co-operation has been received by the Service from state health departments, conservation commissions and representatives of the shell fish industry in connection with measures to insure the sanitary control of shell fish in interstate traffic. No outbreaks of disease due to infected shell fish occurred during the year.

Measures for insuring safe water and milk supplies on trains and vessels engaged in interstate traffic have been continued with cordial co-operation from State and municipal health departments and railroad and steamship companies. Through this co-operative procedure, a vast amount of work has been accomplished at very low cost to the Federal government.

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Sickness Among Industrial Employees During the First Three Months of 1929

During the past nine years a group of approximately 35 sick-benefit associations in industry has reported to the United States Public Health Service the

cases of illness and nonindustrial accidents causing disability for eight consecutive calendar days or longer among its members, and the monthly number of male and female members. These reports have been analyzed once a year, and the results have been made public from time to time by the Public Health Service. This material has afforded measurement and evaluation of several important factors affecting the frequency of different diseases and disease groups in a sample of the industrial population. It is realized, however, that a need also exists for some sort of current index of illness so that attention may be directed to the changing morbidity picture, and preventive effort mobilized to reduce the incidence of those diseases which are causing the greatest impairment to the health, vitality, and efficiency of the adult occupied population as indicated from the recorded sickness experience of a sample of that population.

A report recently published by the Service represents the first attempt to provide fairly current information on industrial morbidity. It was hoped that the sickness rates could be presented soon after the close of the first quarter for 1929, but tardy claims for sickness benefits, deferred diagnoses, and other reasons delayed the reports to the Public Health Service.

An increase of 38 per cent, compared with the first quarter of 1928, is shown in the incidence rate of disabilities lasting more than one week. For the respiratory disease group an 86 per cent increase in frequency is indicated, due, of course, to the influenza epidemic which was still raging in the early part of this year. Influenza itself was 163 per cent more frequent than in the same period last year. The pneumonia (all forms) rate was only 28 per cent above the rate of a year ago. Deaths in the industrial population of the United States and Canada followed the increased frequency of sickness. A large life insurance company reports an increase of 18 per cent in the industrial death rate in the first quarter compared with the same part of 1928. The mortality rate appears to have been higher than during the first three months of any year since 1920. The combined influenza-pneumonia death rate showed an increase of 88 per cent over the rate in the first quarter of 1928. Disabilities which lasted more than one week on account of influenza and pneumonia in our sample of the industrial population increased 147 per cent.

Sickness from nonrespiratory diseases as a whole occurred at much the same frequency in the two periods.

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Chemical Obliteration of Varicose Veins

Howard M. Kern and Lewis W. Angle, Baltimore (J.A.M.A., Aug. 24, 1929), report on the treatment of 104 cases of varicose veins and 148 legs. The majority of patients had varicose veins on the leg and thigh. There were 651 injections given, varying in individual cases from two to twenty-seven. Two patients had been previously operated on; nineteen cases were complicated by ulcer, and six cases were complicated by evzema. Three patients had superficial ulcerations following the use of 20 to 30 per cent sodium chloride solution. These were not due to faulty injections but to wounds in spite of the fact that careful subsequent leakage from the puncture and prolonged pressure was made over the site. In three cases there was an ascending chemical phlebitis following the injections of salt solution. There was one recurrence after six weeks. The veins had been obliterated by cohesion of the walls and support was not given. This patient was given injections later, with a good result. There has been no case of infection or embolism. In no case was there failure to obliterate the injected veins. However, two patients with tremendous dilatation of the internal saphenous vein required twenty-five and twenty-seven injections, respectively, and in one very resistant case treatment is not yet completed. The ulcers have healed as if by magic except in two instances in which there had been a recurrence of ulcer formation for fifteen years and the tissues of the leg had undergone such trophic changes that healing was almost impossible except by radical excision and grafting. Although these ulcers have not healed they have

been greatly reduced in size. None of the patients lost time from work. The authors are convinced that the injection treatment is the method of choice as opposed to operative treatment, both from the standpoint of danger and also from the standpoint of time lost. There are four contraindications to this treatment: (a) active or latent phlebitis; (b) obstruction to the deep veins; (c) arterial disease of the extremities (Raynaud's disease and thrombo-angiitis), and (d) cardiac disease. Pregnancy, in itself, is not a contraindication, but as the varices are greatly improved after delivery, Kern and Angle believe it is best to wait. A mixture of 50 per cent dextrose and 30 per cent sodium chloride is an ideal solution to use for obliterating the veins. Injections should be made in the horizontal position, if possible. If the internal saphenous vein is varicosed above the knee as well as below, it should be obliterated as high as is necessary to insure a cure of the varices of the leg. There is little or no danger in the treatment if it is done by careful operators with a thorough understanding of vascular conditions.

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Erysipelas

In the case reported by A. Wilmot Jacobsen, Buffalo (J.A.M.A., Aug. 3, 1929), erysipelas streptococcus antitoxin given in large doses (the full adult dose was administered on each occasion) failed to cause clinical improvement. The temperature remained elevated, the rash continued to spread and the general condition grew steadily worse. The fact that adult doses were given to an infant weighing 20 pounds (9 Kg.) would seem to eliminate inadequate dosage as a factor in the failure of serum treatment. Nor can delay in administration or extreme debilitation of the patient be advanced as reasons for the failure. This is, in fact, one of those cases not infrequently seen and well recognized by men who have had experience with the use of antitoxin in erysipelas, in which antitoxin seems not to exert any effect whatever. On the other hand, blood transfusion on two occasions produced immediate and striking results. As there are probably many different strains of the streptococcus of erysipelas, one might expect the blood of one donor to be ineffective in a given case while that of another brought results. In a similar manner, failure of antitoxin therapy in a case due to an atypical strain of streptococcus could be explained.

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Acriflavine Hydrochloride and Acriflavine Base

When first used, acriflavine base was called "trypaflavine" by Ehrlich. In England and in this country, however, the hydrochloride is commonly known as acriflavine, although the free base (which has also the designation "neutral" acriflavine) sometimes goes under the same name. Because the standards for these dyes which had been adopted by the Council on Pharmacy and Chemistry in 1919 had been found inadequate and because some American authors had asserted that the foreign product was superior to the domestic, the American Medical Association Chemical Laboratory undertook an extensive investigation of the composition of the dyes. As a result of the comparison of the various European and American brands of acriflavine hydrochloride and acriflavine base it is concluded that there is not sufficient difference in the purity to justify the statement that the foreign product is superior to the domestic, even though at times the brands differ in appearance. The work of the laboratory emphasized that a solution of acriflavine hydrochloride is distinctly acid in character. Even a solution of acriflavine base imparted an acid reaction in the range of a pH from 3 to 5. Two years ago, after these investigations were started, the Council on Pharmacy and Chemistry adopted for new and nonofficial remedies the scientific names acriflavine hydrochloride, for the product generally known as acriflavine, and the scientific name acriflavine base for "neutral" acriflavine, and the completed work of the laboratory emphasizes the importance of the adoption of these names by physicians in their prescriptions and their publications. (J.A.M.A., August 31, '29.)

Action of Specific Diuretics

Experiments were made by George M. Curtis, Chicago (J.A.M.A., Dec. 28, 1929), to answer the question of reflex anuria. The simultaneous administration of 100 cc. of distilled water intraperitoneally at body temperature and the customary dose of the diuretic intramuscularly did not result in any diuresis in rabbits with denervated kidneys. Not only was the ordinary response to the specific diuretic blocked, but even the denervation polyuria was decreased. A secondary diuresis was evident. The blocking of the action of the specific diuretic cannot thus be the result of a reflex nervous inhibition of urinary secretion. Fluid recovered from the peritoneal cavity sixty minutes after the injection of distilled water was nearly isotonic and had a high concentration of electrolytes, with about 23 per cent other than chlorides. The nitrogen concentration of 0.24 per cent indicated albuminous substance approaching 1.5 per cent. When distilled water at body temperature is perfused through the peritoneal cavity of normal rabbits at the rate of 500 cc. an hour, the blood chloride steadily falls. Other electrolytes are likewise dialyzed away from the blood and tissues. The secretion of urine soon diminishes and an anuria ensues. Injection of the diuretic during the perfusion does not produce any response. There is no secondary diuresis, since the intraperitoneal fluid acquires but a low concentration of electrolyes at any one time. The kidney is not incapacitated by the perfusion, since a marked diuresis results if simultaneously 2.5 per cent sodium chloride is given intravenously at the rate of 1 cc. a minute. Various theories have been proposed to account for the action of the specific diuretic. Since the work of von Schroeder they have been thought to act directly on the kidney, and this is now the most generally accepted teaching. The view that they act intrarenally, however, is gaining adherents. These studies teach that the primary action of the specific diuretics is on the tissues. Under their influence permeability changes are initiated, resulting in a rapid passage of electrolyes, principally chlorides, into the blood stream. These act as stimulants to the kidney and initiate the formation of the urine. Opening up a new pathway for the chlorides and other electrolytes, by the simple procedure of intraperitoneal injections, definitely changes the ordinary response. Associated with the action on the tissues is doubtless a similar one on the renal cells.

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Present Status of Convalescent Serum Therapy

The impression of W. H. Kellogg, Berkeley, Calif. (J.A.M.A., Dec. 21, 1929), gained from an analysis of some published reports, is that convalescent serum is of value in the treatment of poliomyelitis, and that its use should be encouraged and extended. Several facts seem fairly conclusive from the literature studied. These may be stated as follows: Whatever benefit may be expected from convalescent serum can be realized only when it is given in the preparalytic stage. The intrathecal route would seem to be as safe, and certainly as effective, as less direct methods. The intramuscular or intravenous route is possibly as effective as the intrathecal, excepting for a certain amount of delay in reaching the spinal fluid with antibodies, but further studies on this point are desirable. The prophylactic use of convalescent serum given subcutaneously or intramuscularly in time of epidemic, as suggested by Flexner, is amply backed up in its rationality by experiments with monkeys and is probably a valuable measure, albeit limited in application by difficulties in obtaining serum. Further information on the value of convalescent serum is needed and, in the prosecution of studies, the prime requisite is a real control represented by a series of untreated cases in every respect the same as are treated cases. This similarity must include time, stage of the epidemic, and clinical type. Every published study should give full details as to how and why certain cases were selected for controls. Published studies on the effect of convalescent serum should exclude all abortive cases on account of the uncertainty of diagnosis, Characteristic symptoms of central nervous system involve-

ment should be present, and cases in which spinal fluid examinations are not made should be tabulated separately. In view of the widespread immunity to poliomyelitis indicated by the low attack rate, the possibility that the so-called normal serum of young adults may frequently carry immune bodies in serviceable amounts, and the difficulties in the way of securing an adequate supply of known convalescent serum, it is suggested that an experiment with normal serum would be worth while.

Gastric Manifestations Associated With a Spastic Colon

It is generally recognized that the symptoms of recurring epigastric pain, nausea and vomiting which are usually part of the clinical picture of gastric disease may sometimes be associated with more distant lesions, such as chronic infections of the gallbladder and of the appendix. It is not so generally appreciated, however, that the same symptoms are also commonly associated with a chronic spastic condition of the colon. The type of pain under discussion by Fred M. Smith, G. H. Miller and W. M. Fowler, Iowa City (J.A.M.A., Dec. 21, 1929), is localized in the epigastrium and often to the right and above the umbilicus. It may occur at intervals of from one to three hours after meals and is described as a sensation of fulness, burning or gnawing or a cramplike distress. These features of the discomfort resemble closely those of a peptic ulcer. They are, however, invariably associated with bowel symptoms, such as a feeling of fulness or even cramps over the lower part of the badomen and the consciousness of gas. This distress is furthermore not always relieved by the taking of food or of sodium bicarbonate except when the latter is followed by the eructation of gas. It is relieved by the passage of gas by bowel and by bowel movement. It is intensified by any aggravation of the bowel condition and is most prominent when the stools are scybalous or pencil-like in character. It may be experimentally induced by the distention of the stomach with air or by inflation of the colon. Three cases are reported.

Clinical Value of Recent Advances In Gastric Analysis

Garnett Cheney, San Francisco (J.A.M.A., Dec. 28, 1929), urges that all patients suffering from gastro-intestinal disorders have their gastric secretion carefully studied. Such studies have not only given indications for satisfactory therapy but also disclosed fairly constant observations in certain common diseases. The frequency of high acidity in cases of peptic ulcer of the stomach make it a highly important diagnostic sign. It occurred in 96.4 per cent of 111 uncomplicated cases. Gastric acidity observations in gallbladder disease are of no positive diagnostic value, but excess of bile in the stomach is a frequent occurrence. Gastric secretion observations in cancer of the stomach may be highly characteristic and of great important in differential diagnosis. As pernicious anemia occurs only in cases of true or complete achlorhydria, a histamine test meal is indicated in order to determine this diagnostic fact.

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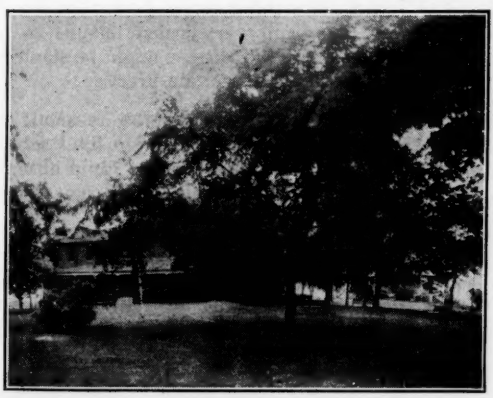

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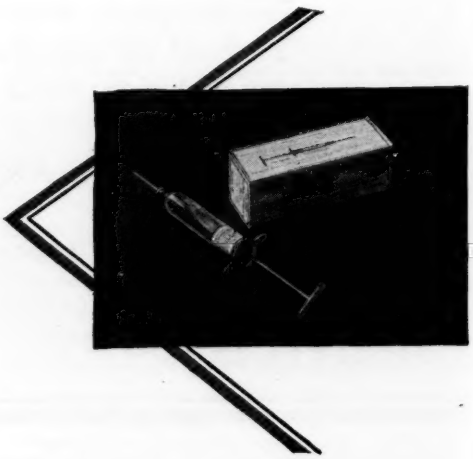

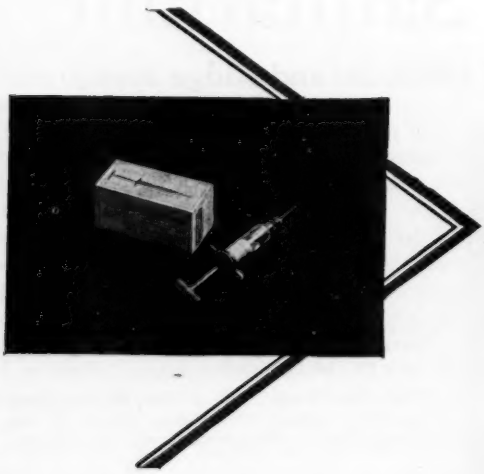

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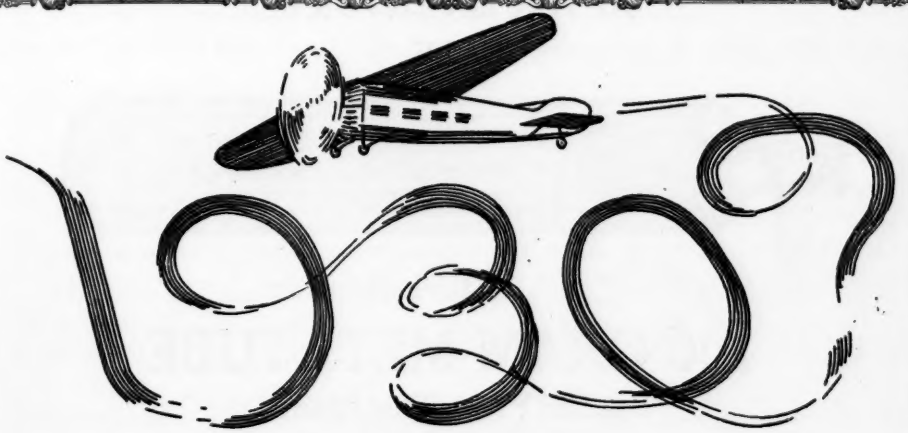

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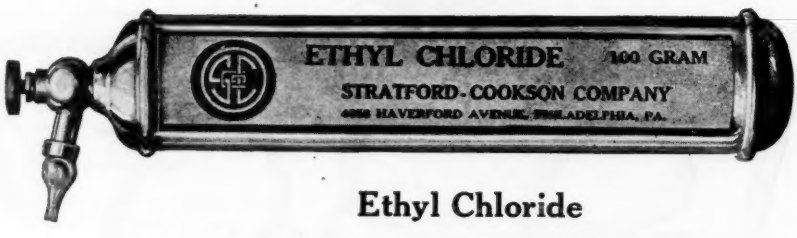

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Anderson	Johnson, W. K., Garnett	Milligan, J. A., Garnett	2nd Wednesday
Atchison	Dingess, M. T., Atchison	Horner, T. E., Atchison	1st Wed. ex. July and August
Barton	I. J. Brown, Hoisington	L. R. McGill, Hoisington	1st Tuesday, Jan., Apr., June, Oct.
Bourbon	W. S. Gooch, Fort Scott	R. Y. Strohm, Fort Scott	2nd Monday
Brown	H. J. Deaver, Sabetha	S. M. Hibbard, Sabetha	2nd Friday
Butler	G. G. Whitley, Douglas	J. M. Devereaux, El Dorado	2nd Friday
Central Kansas	L. V. Turgeon, Wilson	F. K. Meade, Hays, Kan.	Dec., March, June, Sept.
Cherokee	R. C. Lowdermilk, Galena	W. H. Iliff, Baxter Springs	2nd Monday
Clay	C. C. Stillman, Morganville	X. Olsen, Clay Center	2nd Wednesday
Cloud	Ellis Starr, Concordia	R. E. Weaver, Concordia	Last Thursday
Coffey	H. T. Salisbury, Burlington	A. B. McConnell, Burlington	
Cowley	Wentworth, J. L., Arkansas Cy	Beatson, L. M., Arkansas City	1st Tues. ex. July, Aug., Sept.
Crawford	Kiehl, O. B., Pittsburg	Rush, F. H., Pittsburg	3rd Thursday
Decatur-Norton	Cole, C. W., Norton	Stephenson, Walter, Norton	Called
Dickinson	T. R. Conklin, Abilene	D. Peterson, Herington	
Doniphan	A. E. Cordonier, Troy	W. M. Boone, Highland	1st Tues. Jan., Apr., July, Oct.
Douglas	A. J. Anderson, Lawrence	R. B. Hutchinson, Lawrence	1st Thursday
Elk	R. C. Hutcheson, Elk Falls	DePew, F. L., Howard	Called
Finney	C. Rewerts, Garden City	O. W. Miner, Garden City	
Ford	C. E. Bandy, Bucklin	W. F. Pine, Dodge City	Last Wednesday
Franklin	Wm. J. Scott, Ottawa	Davis, G. W., Ottawa	
Harper	C. E. Ressler, Anthony	A. E. Walker, Anthony	3rd Wed., Mar., June, Sept., Dec.
Harvey	Norris, H. H., Whitewater	Martin, M. C., Newton	1st Monday
Jackson	M. S. McGrew, Holton	C. A. Wyatt, Holton	1st Wed., Jan., Apr., July, Oct.
Jewell	J. E. Hawley, Burr Oak	C. W. Inge, Formosa	
Johnson	Jones, C. W., Olathe	Bronson, D. E., Olathe	Second Monday
Kingman	C. W. Longenecker, Kingman	H. E. Haskins, Kingman	
Labette	Stevenson, O. E., Oswego	Naramore, J. T., Parsons	2nd Thursday ex. summer months
Leavenworth	Leon Matassarin, Leavenworth	Stacy, H. J., Leavenworth	1st Monday
Lincoln	H. L. Hinkley, Barnard	M. Newlon, Lincoln	1st Monday
Linn	D. E. Green, Pleasanton	H. L. Clarke, LaCygne	2nd Thursday
Lyon	C. L. Patton, Emporia	M. A. Finley, Emporia	1st Tuesday
Marion	J. H. Saylor, Marion	E. H. Johnson, Peabody	1st Tuesday
Marshall	McAllister, R. L., Marysville	Haerle, Henry, Marysville	2nd Wednesday
Meade-Seward	F. W. Huddleston, Liberal	Trekell, E., Liberal	Last Thurs., July, Oct., Jan., Apr.
Miami	Lowe, O. C., Paola	Fowler, J. F., Osawatomie	Second Tuesday
Mitchell	W. H. Cook, Beloit	Madtson, Martha, Beloit	
Montgomery	White, M. L., Coffeyville	Pinkston, J. A., Independence	
McPherson	W. C. Heaston, McPherson	G. R. Dean, McPherson	2nd Wednesday
Nemaha	F. S. Deem, Oneida	Murdock, S., Jr., Sabetha	
Neosho	L. D. Johnson, Chanute	A. M. Garton, Chanute	Last Thursday every other month
Osborne	J. D. Johnson, Alton	T. H. Smith, Osborne	Second Monday
Ottawa	L. M. Hinshaw, Bennington	C. M. Vermillion, Minneapolis	
Pawnee	G. S. Weaver, Larned	C. E. Sheppard, Larned	
Pratt	E. M. Ireland, Pratt	W. F. Bernstorf, Pratt	2nd Tuesday
Reno	F. W. Koons, Nickerson	C. A. Boyd, Hutchinson	1st Monday
Republic	C. V. Haggman, Scandia	H. D. Thomas, Belleville	4th Friday
Rice	Trueheart, M., Sterling	Little, J. M., Sterling	2nd Thursday in November
Riley	Schoonhoven, R. G., Manhattan	Colt, J. D., Jr., Manhattan	First Monday
Rush-Ness	Roy Russell, Ness City	W. Singleton, McCracken	First Monday
Saline	Seitz, G. W., Salina	Dillingham, W. R., Salina	
Sedgwick	E. D. Carter, Wichita	Frances H. Schiltz, Wichita	1st and 3rd Tuesdays
Shawnee	J. G. Stewart, Topeka	Brown, Earle G., Topeka	1st and 3rd Tuesday
Smith	D. W. Relihan, Smith Center	V. E. Watts, Smith Center	1st Monday
Stafford	M. M. Hart, Macksville	J. T. Scott, St. John	Second Thursday
Sumner	J. R. Burnett, Caldwell	I. H. Dillon, Wellington	2nd Wednesday
Washington	H. D. Smith, Washington	W. M. Earnest, Washington	Last Thursday every quarter
Wilson	B. P. Smith, Neodesha	E. C. Duncan, Fredonia	
Woodson	S. H. Murphy, Yates Center	A. C. Dingus, Yates Center	2nd Monday
Wyandotte	Asbell, E. L., Kansas City	Lucas, R. T., Kansas City	Every 2nd Tues. ex. summer months

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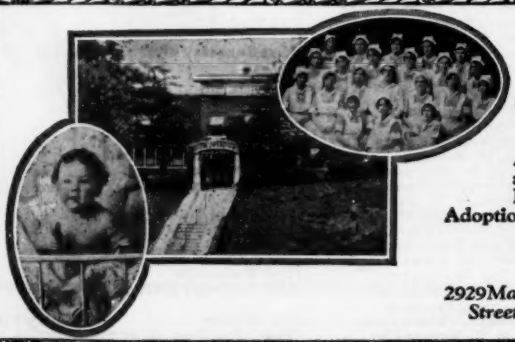

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City .....

State .....

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To the Officers and Members of the

.....**County Medical Society**

GENTLEMEN:—I hereby make application for membership in your Society, and, if accepted as a member, I agree to support its Constitution and By-laws, to practice in accordance with the established usages of the profession, and will in no way profess adherence or give my support to any exclusive dogma or school.

1. I was born at.....on the.....day of.....1.....

2. My preliminary education was obtained at.....
(Public schools, high school or college)

.....located at.....from which I
(City and State)

graduated in the year 1.....and received the degree of.....

3. My medical education was obtained at.....
(Name of Medical College)

.....located at.....

from which I graduated in the year 1.....

4. My state certificate was issued.....
(Name of State and date of license under which you are practicing)

5. I have practiced in my present location.....years; and at the following places for the years named.....
(Name each location and give dates)

.....

6. I hold the following positions:.....
(Give college and hospital positions, insurance companies for which you are the examiner, etc.)

.....

.....

7. Specialty.....

8. Residence.....Street

9. Office.....Street

10. Office Hours.....

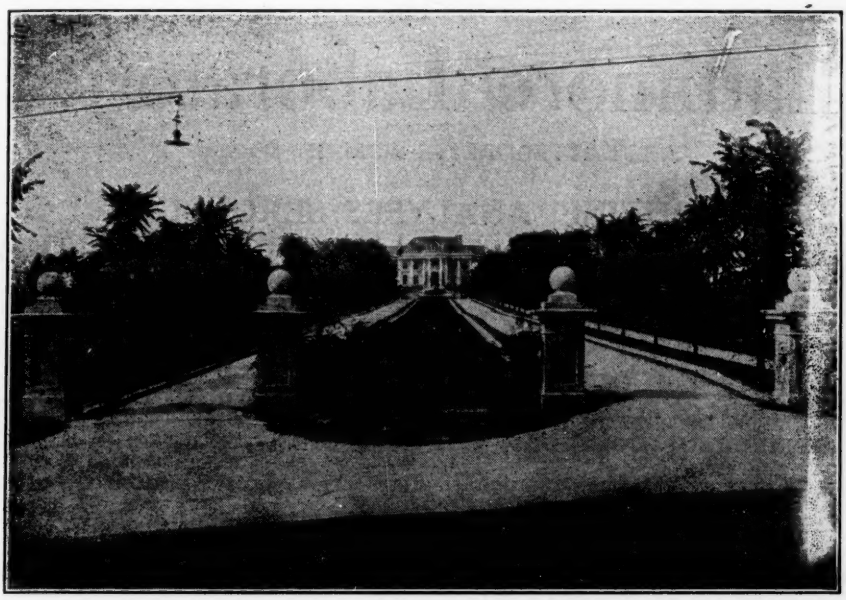
Respectfully, Name.....

P. O.....

County.....

State .....

NOTE.—The above information is primarily for use in the Card Index System of the County and State and for the American Medical Directory.



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